Professional MBA
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Evaluation Process to Identify Potential Opportunities for Investments

Master's Thesis submitted for the degree of
"Master of Business Administration"

supervised by
Univ.-Prof. Dr. Nikolaus Franke

Marc Stein
9557145

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Affidavit

I, **Marc Stein**, herby declare,

1. that I am the sole author of the present Master's Thesis "Evaluation Process to Identify Potential Opportunities for Investments", 85 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
2. that I have not prior to this date submitted this Master's Thesis as an examination paper in any form in Austria or abroad.

Linz, 27^{th} March 2011

Marc Stein

Abstract

This thesis deals with the topic of how opportunities can be evaluated with regard to a potential financial investment. Main focus is laid on the development of an evaluation concept, which can be handled easily and with optimized resources, but at the same time delivers significant results with regard to the potential of an opportunity. Core element is an evaluation matrix that consists of predefined questions, which are differently weighted and by which the opportunity is evaluated within different categories. These questions are answered by diverse internal and external sources, whereas the external sources act as a feedback mechanism to constantly optimize the evaluation as well as to adapt it to the current needs of the market. Main characteristic of the concept is a comparable and adaptable process, which provides a significant indicator supporting the subsequent investment decisions.

Keywords: entrepreneurship, investment, evaluation, opportunities, process

Kurzfassung

Diese Diplomarbeit beschäftigt sich mit der Thematik, wie Produkte und Unternehmungen (bezeichnet als Opportunities) für mögliche finanzielle Investitionen evaluiert werden können. Hauptaugenmerk liegt dabei auf der Entwicklung eines Evaluierungskonzepts, welches einfach und mit optimiertem Einsatz durchführbar ist, aber gleichzeitig aussagekräftige Ergebnisse über das Potential einer Opportunity liefert. Kernelement des Konzepts ist eine Matrix bestehend aus vordefinierten bzw. gewichteten Fragen, welche dazu dienen, eine Opportunity in verschiedenen Kategorien zu bewerten. Diese Fragen werden sowohl von internen als auch externen Ressourcen beantwortet, wobei zusätzlich die von Extern beantworteten Fragen einen Feedbackmechanismus ergeben, der es erlaubt den Evaluierungsprozess laufend zu optimieren und den Marktgegebenheiten anzupassen. Charakteristisch für das Konzept ist die Verwendung eines vergleichbaren und adaptierbaren Prozesses, der durch ein aussagekräftiges Ergebnis die Entscheidung für eine Investition unterstützt.

Contents

Chapter 1

Introduction

Before an investment for an opportunity takes place an evaluation has to be performed, which can be regarded as the base for a financial decision. However, there are different options to evaluate an opportunity like using one's own experience mixed with intuition, which is not very comprehensible, or using only hard facts (revenues, potential market growth, rate of return, etc.) as an indicator, which is more a pragmatic approach. Another possibility is an evaluation process that combines experiences and hard facts in one process with the focus of receiving an overall view of the potential of the opportunity, therefore acting as an indicator for an investment decision. In order to receive efficient results the process should be easy to handle, comprehensible and comparable. This could be achieved by creating an evaluation matrix consisting of predefined questions about the opportunity, which are differently weighted and have to be answered by diverse internal and external sources. Additionally, the evaluation matrix enables to directly interact with the market by using selected questions as a feedback mechanism, in order to constantly improve the process and to see how the evaluation is in line with current market requirements and trends. The goal of this evaluation is to figure out where the opportunity is positioned on the market and what potentials are available. Additionally, the whole concept should be easily adaptable for different segments of opportunity evaluations by changing either the questions or the weighting factors.

In this work, the overall evaluation process for identifying potential opportunities for an investment will be investigated in detail by using internet technology related opportunities. One main focus is the development of an evaluation matrix

as addressed above, which will serve as an easy to handle and versatile tool, which allows obtaining a meaningful indicator for the potential of an opportunity.

1.1 Thesis Outline

Chapter 2, *Entrepreneurship & Investments:* Gives an overview of the topics entrepreneurship, opportunities and how the investment and exit situation of venture capital is changing.

Chapter 3, *Investment Evaluation Process:* Explains the concept of the opportunity evaluation process and its different phases.

Chapter 4, *Evaluation Matrix:* Describes the core concept of the evaluation process using weighting factors with related questions.

Chapter 5, *Optimization using Feedback:* Points out how diverse sources can be used as a feedback mechanism for improving the evaluation process.

Chapter 6, *Analysis of Data:* Explains the calculation principles of the evaluation matrix based on an example.

Chapter 7, *Initiating the Process:* Gives a short overview of additional input sources that can act as a complementary evaluation reference.

Chapter 8, *Conclusion:* Points out briefly the advantagses and fields of applications.

Chapter 2

Entrepreneurship & Investments

This chapter gives an overview of entrepreneurship, opportunities and different sources to finance a venture. Additionally, an example of a financing process is briefly described as well as how investment and exit situations of venture capital market is changing based on data from the USA.

2.1 Opportunity

> Quote by Thomas Alva Edison: "Opportunity is missed by most people because it is dressed in overalls and looks like work." [Wika]

A business opportunity can be described as an occasion occuring simultaneously with certain circumstances, which results in the possibility to create a business. In general, it starts with an idea that has to be developed and challenged against the market in order to create a business out of it. Therefore, the main focus is to identify market and commercialization potentials of the idea, which can be systematically approached by the five-step model explained by J. Kaplan [Kap01]: 1. seizing the opportunity, 2. identifying the need of market, 3. developing a plan, 4. determining the needed resources and 5. managing the business.

2.2 Entrepreneurship

> "It's not magic; it's not mysterious; and it has nothing to do with genes. It's a discipline and, like any discipline, it can be learned."

With these words Peter F. Drucker describes the capability of entrepreneurship [BM91]. The term originally derives from the French word "entreprende" meaning "to undertake" [BCW08] and it can be regarded as to undertake an entrepreneurial risk for a new idea. Especially, risk is a factor an entrepreneur has always to be aware of because the journey from vision to commercialization is unpredictable resulting in emotional ups and downs [Jol97]. However, to be successful entrepreneurs have to take further factors into account like resources, time effort and financial aspects.

The decision of becoming an entrepreneur as well as the intention of choosing self-employment is often influenced by personal factors like striving for independence, self-realization as well as by environmental factors like family, friends or education. Furthermore, it is also related to the propensity to take a risk [HP95] and the need for achievement [Joh90]. For many start-ups, a good ground for an entrepreneurial spirit are universities, which is revealed in a benchmark study of N. Franke and C. Lüthje [FL04].

In general, entrepreneurs share several characteristics [DJEB01] like the ability to deal with ambiguity, tolerating risks, flexibility, focusing on execution and being action oriented [KW10]. However, the most important characteristics are the ability to lead and to communicate: leading as the way to inspire and motivate people for the idea and communicating as the way to transport the idea to others in order to achieve goals. In both ways, the entrepreneur interacts with people which are essential resources for a successful implementation of the idea.

A key success factor to create a commercialized product out of an idea is financial support. But, before requesting for capital an entrepreneur has to shape the idea into an attractive business opportunity for investors. This process can be split up into the phases of identifying and evaluating the opportunity, developing a business plan, determining the required resources and to managing the own company [HPS10]. A more detailed approach to the whole entrepreneurial process is described by "The Five-stage Entrepreneurial Process" by Kaplan and Warren [KW10]:

- Stage 1: Analysis of the opportunity (evaluation of the idea, definition of a vision, etc.).
- Stage 2: Development of a plan and selection of the organization form (business plan, market strategies, pricing, legal structure of business, etc.)
- Stage 3: Finding financial partners and aquiring funding (bootstrapping, early stage funding, etc.)
- Stage 4: Allocation of the required resources and implementation of the plan (management and organization growth, business model, increasing the value of the company, etc.)
- Stage 5: Scaling and harvesting (exit strategies, alliances, etc.)

However, shaping an idea is a long way for an entrepreneur and is paved with challenges, obstacles and sometimes accompanied by failures. But, a business failure is a positive situation as long as somebody tries to learn from it [She03] because "Our failures help us to better understand what we need to do if we want to improve." [Sit96]. Therefore, successful entrepreneurs have gone through several ups and downs always trying to learn from each situation in order to gain experience.

2.3 Financing an Opportunity

Financing a business opportunity is one of the most challenging tasks in an entrepreneur's life. Fortunately, there are many ways to get financed but, basically, an entrepreneur has to consider two financing options: debts or equity [HPS10]. Debts financing is linked with interest rates of a loan that have to be paid back, whereas equity financing is an exchange between investment money and company shares, resulting in delivering ownership to investors.

In general, entrepreneurs have different sources to finance their venture:

- **Entrepreneurs' own capital**: This is often an important source for capital [Ald99] and can be regarded as the least expensive money in terms of cost and control. Investing in its own venture can attract further financing sources because it is a positive signal towards investors. However, the

commitment is not necessarily money, but it is moreover all the assets an entrepreneur puts into the venture. Exactly this effort of the entrepreneur can be a decision criterion for investors who want to see full commitment of the entrepreneur and who want to be convinced that everybody is in the same boat. From the financial point of view, investing in its own business enables an entrepreneur to receive the greatest returns.

- **Family and friends**: This is a relatively easy way to obtain additional capital for the venture due to the close relationship involved and in general, these persons are not eager to receive quick profits. Additionally, the risk awareness is not so high, any negotiations as well as post-negotiation are fairly informal and in many cases, the word of the entrepreneur is sufficient enough, so that no detailed analyses of the venture are demanded. However, this situation can become difficult as it is based on personal relationships, which can result in interpersonal damages. Therefore, an entrepreneur should always maintain a formal business relationship by using contracts and by providing documentation of the proceedings.

- **Government grant**: In each country, different government programs to set economic and technological impulses are available, which can be claimed by start-up companies, too. These programs offer capital for low interest rates with the focus of developing companies, in order to set impulses for the market. In Austria two main government programs exist: The "Austria Wirtschaftsservice" (AWS) [AWS], a business development bank that offers erp-loans (European recovery program loans), grants, guarantees and warranties, and the "Österreichische Forschungsförderungsgesellschaft" (FFG) [FFG], a funding agency for industrial research.

- **Bank loans**: Receiving loans from a bank as an early-stage entrepreneur is difficult because of the high risks the bank has to face. Therefore, bank loans have often to be secured by personal or business assets. In general, the interest rates are higher compared to government grants.

- **Business angels**: These are private individuals that invest capital in potential opportunities in exchange for shares. They are often former entrepreneurs or senior executives who are willing to risk their money and like to get personally involved [CFLS06]. Their investments are very often local and their decision of investing is related to their personal experience

and knowledge. In general, a business angel can be regarded as a seed or early-stage capital source in a range of $ 50.000 to $ 500.000, expecting the venture to go public or to be acquired in the range of five to seven years [KW10]. Furthermore, a business angel expects a return on investment of 20 % to 35 % or even a seat on the board of directors [Sim02]. For an entrepreneur, a business angel is the ideal investor to get the company started, to expand the business network and to support the venture with experience.

- **Venture capital**: A venture capital firm is a kind of a professional financial organization that manages a capital fund raised from external institutions (pension funds, security funds, etc.) and invests in a portfolio of ventures [Sah90]. It is mainly organized through partnerships with a strong focus on high growth and high returns on investments. In general, venture capital focuses on long-term investments over a five year period and the investments can be expected in million dollar ranges [HPS10]. However, the process of venture capital consists of different investment rounds of financing (A-, B-, C-round, etc.) which can result in a dilution of shares for entrepreneurs as well as for previous investors. Preconditions for an investment is a detailed analysis of the venture (risk, management, markets, intellectual property, etc.) according to the criteria of due diligence. Finally, a positive review leads to terms and conditions for an investment deal and to a signing of contracts. Compared to business angels, a venture capital firm only invests in a product or service that is close to commercialization [KW10]. For an entrepreneur, a venture capital investment means loss of control, more pressure, as well as more reporting and a stronger focus on financial management.

A typical financing process to collect capital consists of several investment rounds. With each round, the funding of the venture increases but at the same time, the expectations are rising, like internal rate of return, company growth, etc. The following Table 2.1 shows an example of different financing rounds:

Round	Sources
Pre-Seed	Own equity, family, friends, fools, grants, funds
Seed	Business angels
A	Business angels group, early-stage venture capital
B	Venture capital
C	Venture capital
Exit	Large private equity fund

Table 2.1: Example of different financing rounds.

Additionally, financing of a venture can also be split up into several business development phases (see Table 2.2):

Stage	Description
Pre-Seed & Seed	From an idea to the first prototype
Early Stage	Typical start-up phase including product development, business plan creation, etc.
Expansion	Growth phase with increasing capital demand
Later Stage	Aquisition, leveraged buyout

Table 2.2: Example of bussines development stages.

2.4 Investments & Exits

> "The new always looks so puny - so unpromising - next to the reality of the massive, ongoing business." [BM91]

The investment situation for ventures has dramatically changed over the last couple of years due to the financial situation on the market. However, the biggest collapse occurred during the "dot.com" bubble (2000-2001) which resulted in restrained behavior of investors. This also influenced the possible exit scenarios, especially the one of venture backed IPOs (initial public offerings). Although, there are further exit scenarios like trade sale or acquisition, for many venture capital firms the preferred exit is the IPO because of a higher value of the venture on the market compared to a trade sale [CFLS06]. But the reality is that IPOs are relatively rare and trade sale as well as acquisition is the most common way of an exit scenario. Figure 2.1 shows the development of venture backed IPOs and of acquisitions in the USA since 1990 with a huge gap starting in 2001. The data of the statistic is taken from the Yearbook 2010 of the National Venture Capital Association [NVC10].

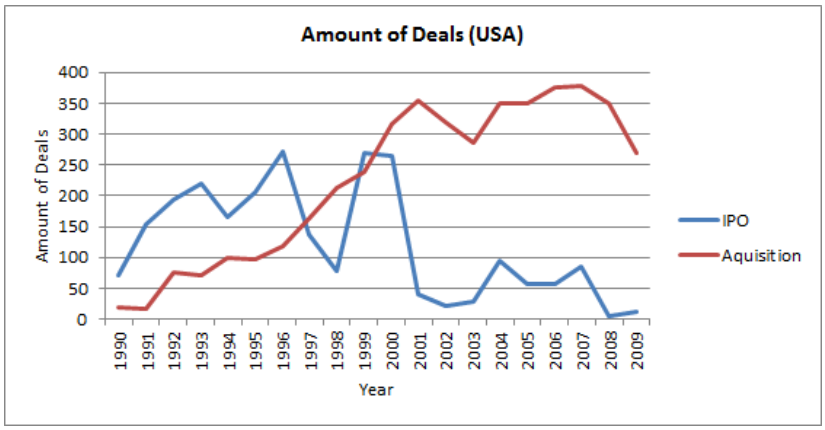

Figure 2.1: IPOs and aquisition deals, USA (data is listed in Appendix F).

How the investment and exit situation has changed over the last years will be explained in more detail on the next pages trying, to give a short overview of the current venture capital situation in the USA.

2.4.1 Investment Situation

The following figures and tables are based on the data of the USA for first sequence financing (seed and early stage phase) provided by MoneyTree^{TM} report [Pri] (listed in Appendix F).

After an overwhelming increase in the amount of investment money and deals until the year 2000, the whole market collapsed because of the internet bubble and recovered again in 2003 (see Figure 2.2).

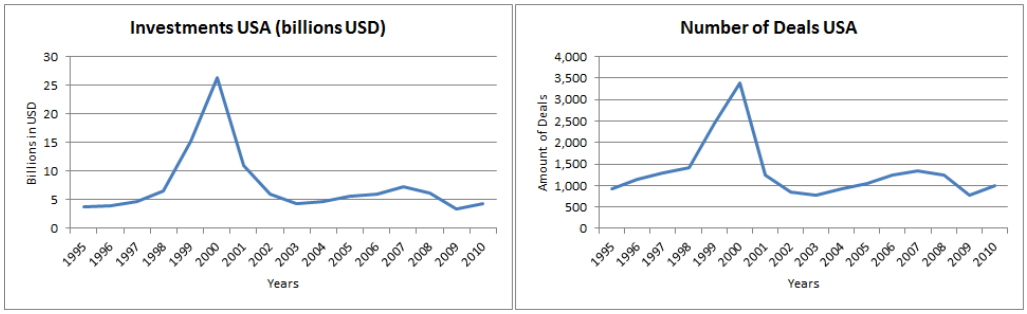

Figure 2.2: Investments and amount of deals in the USA.

From 2005 until 2010 (see Figure 2.3) most of the deals were made in the industries

of software (1,553 deals), media & entertainment (803 deals) and biotechnology (726 deals) whereas the highest spending in USD are in software (USD 6 billions), biotechnology (USD 4 billions) and industrial / energy (USD 4 billions). Regarding the same period of time, 4,366 deals with an amount around USD 24 billions are invested in internet specific companies (this includes first sequence financing and all other deals).

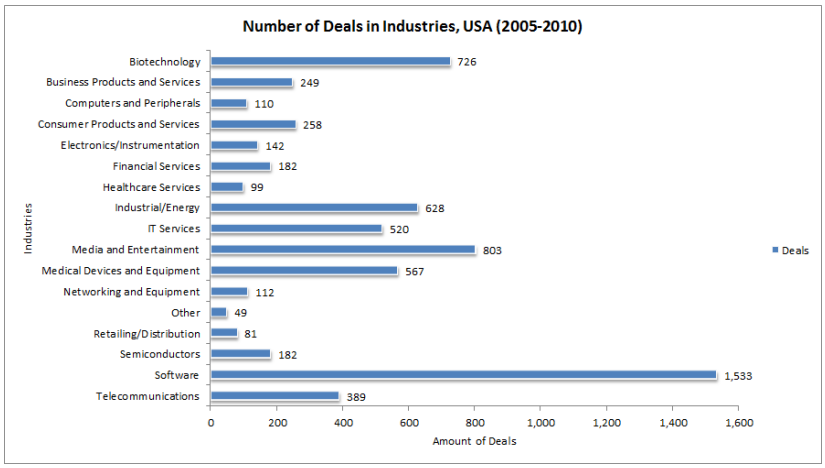

Figure 2.3: Investments in different industries giving the number of deals.

Concerning the different business development stages for the last five years, around USD 12.8 billions were invested in early stage, USD 9,4 billions in expansion phase, USD 6 billions in seed and USD 4,6 billions in later stage ventures (see Figure 2.4 and listing of data in Appendix F).

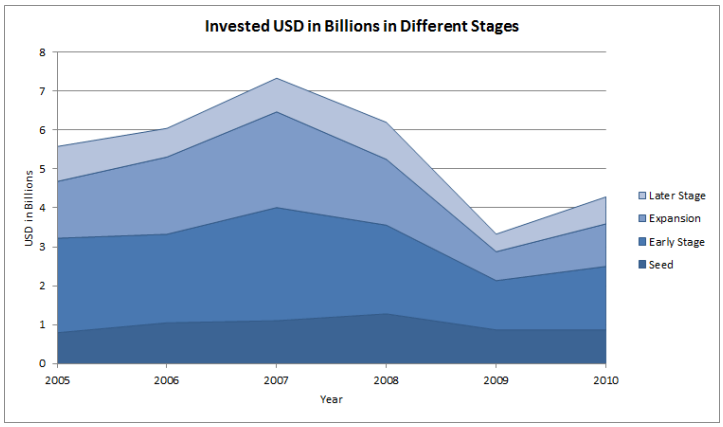

Figure 2.4: USD investments in different stages (2005-2010).

The following Figure 2.5 depicts the investment situation for internet related ventures of the last six years split up into first sequence financing and all other deals:

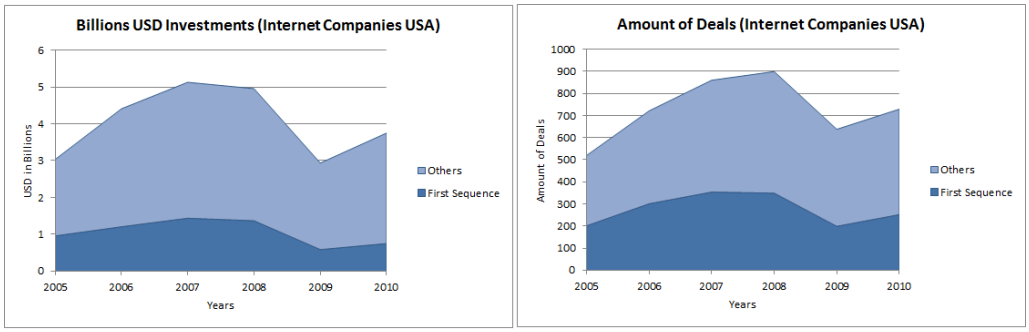

Figure 2.5: Internet related investments & deals (2005-2010).

2.4.2 Exit Situation

The following figures and tables are based on the data of the National Venture Capital Association Yearbook 2010 [NVC10].

Venture capitals firms have to target a high internal rate of return (IRR) for their investments to fulfill the expectations of the business as well as of its limited partners. In order to achieve the targeted return rate of 25% to 30%, only 10% to 20% percent of the funded ventures have to be successful in an exit [Zid98]. However, the exit scenarios, especially for venture backed IPOs, have significantly changed over the last years, resulting in only 12 IPOs raising USD 1,6 billions and 270 acquisitions with USD 14,1 billions disclosed deals in 2009 [NVC10]. These are the first signs of a difficult situation for the venture capital firms in the future.

Table 2.3 on the next page gives an overview of all as well as venture backed IPOs from 1999 to 2009:

Year	All IPOs	Venture Backed IPOs
1999	476	269
2000	350	265
2001	83	41
2002	76	22
2003	67	29
2004	187	94
2005	167	57
2006	167	57
2007	159	86
2008	24	6
2009	39	12
TOTAL	1,795	938

Table 2.3: IPOs in the USA (1999-2009).

The following Figure 2.6 depicts the relationship between venture backed and all IPOs from 2005 to 2009 whereas the complete bars represent all IPOs, the blue bars the venture backed IPOs.

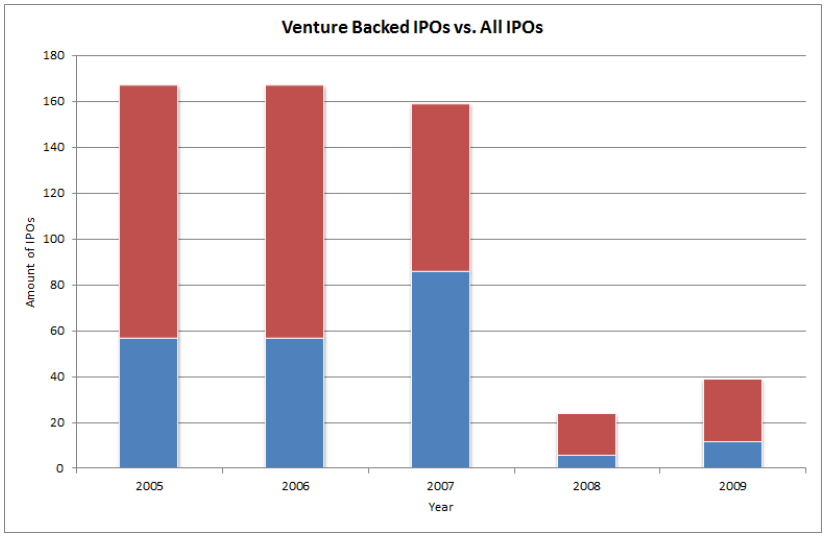

Figure 2.6: All and venture backed IPOs, USA (2005-2009).

Chapter 3

Investment Evaluation Process

This chapter emphases the process of investment evaluation and describes the concept of rating levels which is considered to be a core concept for evaluating potential investment opportunities.

3.1 Process Overview

The investment evaluation process (see Figure 3.1) consists of several phases, starting with the phase of rating levels (see Page 15) and fading into a decision making phase with a possible closing of the opportunity. The purpose of the rating levels is to collect relevant information about the opportunity in order to prepare a decision base for a board of members whether to invest or not.

The rating level concept is based on questions that are differently weighted depending on the focus of an investment company. These questions are grouped into several categories like *Company*, *Product*, *Market*, *Patent*, *Strategies*, *Management*, *Feasibility*, *Risk* and *Financial Attractiveness*. Each question offers four possible answers by selecting a value of 1, 2, 4 or 5, whereas five is the highest and one the lowest value. The result of the rating level phase is a statistical view of the opportunity, which is considered to support the decision process for an investment.

For an efficient resource management and to collect diverse perspectives, the rating level phase is divided into five levels with different emphases as well as

feedback sources. Especially, a feedback which is mainly based on external views is an important mechanism to optimize the whole evaluation process.

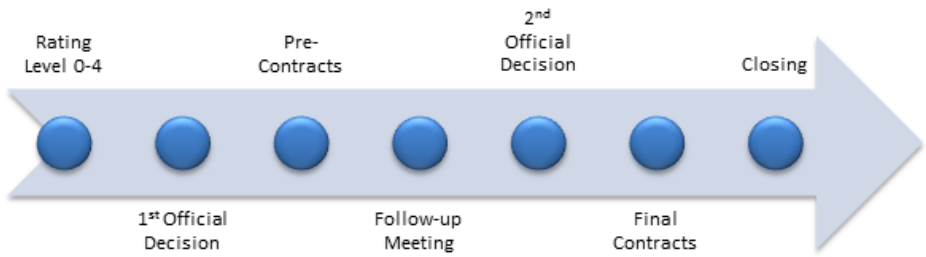

Figure 3.1: Example of an investment evaluation process.

The whole evaluation process aims on finding potential opportunities for investments based on a defined portfolio. However, each of the single phases of the process requires resources and costs. Therefore, it is important to have an effective pre-located filter before any official decision phase is reached, because entering a more formal phase means an increased cost intensity due to, e. g., due diligence, law suits or expert opinions. This filter is situated at the beginning of the whole process represented by the rating levels. Within this filter any opportunity will be evaluated in five levels. Each of these levels is building up on each other by only using a certain amount of pre-defined questions. Generally, the rating level phase starts with an opportunity summary and ends with an analyzed overview of the opportunity. This overview acts as a door opener for the more formal subsequent phases.

As a result of the rating levels, the investment company decides if the opportunity has the potential of being part of its portfolio. Therefore, the management has to announce an official decision, which is the first phase of the subsequent processes. As a consequence, more formal as well as contractual acts will follow like plausibility checks, due diligence, pre-contracts and a possible final contract.

The following listing gives a brief overview of the different phases of the evaluation process:

- **Rating Levels**: This is the main filter of the whole process. It focuses on pre-defined categories which act as a basic principle for the evaluation and uses an opportunity summary as an initial information base.
- **1st Official Decision**: Based on the output of the rating level phase as well as on the output of the discussion of the board which evaluates the investment potential, a first official decision is announced resulting either in a continuation or a termination of the process for the opportunity.
- **Pre-Contracts**: For continuation and development of further business relations between the opportunity and the investment company, pre-contracts are signed. This legal act is necessary because of a following due diligence, which is very cost intensive.
- **Follow-up Meeting**: After a technological and economic due diligence, an internal follow-up meeting within the investment company takes place.
- **2nd Official Decision**: As a result of the follow-up meeting, a second official decision will be announced, resulting either in a continuation or a termination of the process for the opportunity.
- **Final Contracts**: After a positive decision, final contracts are offered to the opportunity.
- **Closing**: The whole process ends with an investment deal backed by contracts and signings of all parties.

The purpose of the different phases is a stepwise approach to an intended closing, providing effective quality checks in between which can also result in an early dropout of the opportunity anytime within the process chain.

3.2 Rating Level Phase

3.2.1 Basic Concept

The core element of the investment evaluation process is the rating level phase which operates as a filter to find potential opportunities based on pre-defined criteria. In general, the phase is divided into two main steps:

- First step: Receiving an opportunity summary in order to decide if it is part of the business focus of the investment company.
- Second step: Evaluation of received and collected information about the opportunity by using pre-defined questions, expert views and optional interviews or presentations by the entrepreneurs.

Opportunity Summary

For starting the rating level phase, an opportunity summary form is required. In order to be comparable to the rating questions, the summary should cover the following information as shown in Table 3.1.

Subject	Requested Information
Business Model	A short describtion of the business model related to the opportunity.
Business Summary	A maximum of two paragraphs which describes the business.
Capital Requirements	Required capital of the opportunity based on its business model and targeted market.
Company Profile	Organizational and geographical structure as well as a short history of the company.
Competitive Advantage	Defining the opportunity's advantages compared to its competition.
Competitors	Present and future competitors based on the current as well targeted market.
Customer Problem	Describing the need of customers and what problems are being or will be solved.
Customers	Current and/or future customer.
Management	Management structure and qualifications.
Products / Services	Current and planned product /services, its stage of development and its estimated feasibility as well as time of realization.
Target Market	Present and planned market that are targeted with the required capital.

Table 3.1: Required information for opportunity summary.

The purpose of the summary is to get a quick and informative overview of the opportunity at the beginning without requesting a complete business plan. The goal is to keep the obstacles very low and to motivate entrepreneurs to hand in

potential opportunities.

Evaluation using Questions

The base elements of the evaluation are pre-defined questions which are grouped in different categories. These questions have to be answered in the rating levels based on the summary of the opportunity and on internal as well as external knowledge. The rating levels phase is split up into five levels where each level has different emphases and receives inputs from diverse sources. Based on the fact that each level concentrates on different topics, only those questions have to be answered that are related to these topics.

After each level, a decision has to be made whether the evaluation of the opportunity will be continued, postponed or even abandoned, for instance, due to missing relevant information or a too early stage of the technology. Some questions can be re-answered at subsequent levels because each level collects additonal information of the opportunity by using internal as well as external feedback mechanisms. In order to receive external views, experts from outside the evaluation company are consulted to give a statement based on only an intersection of the questions. These questions are selected by the criteria that they can be answered without any deep or internal knowledge of the opportunity. After receiving the external view, the external answers are opposed to the internal ones. The deviations are weighted up, which can consequently lead to re-answering of questions. Hence, the external view acts like a feedback as well as a quality assurance system.

Additionally, a re-answering of questions can also be the result of an interview or presentation by the entrepreneur, for instance at level three (see Table 3.3). Because this direct contact provides a closer insight into the opportunity, it can also change the internal opinion, which could result in changing of previous answers. Generally speaking, by requesting other views and by splitting up the evaluation in levels with different emphases, the whole process is very effective in relation to resource management and bottle neck prevention. Overall, it can be regarded as a cycled evaluation system approach with a learning experience.

After the different levels of evaluation with diverse sources of inputs, the output is expected to be an overall view of the opportunity represented by all answered questions and acting as the base for further decisions.

3.2.2 Emphases of Rating Levels

Based on the concept of the rating level phase each level focuses on different areas as shown in Table 3.2. With this emphases approach, each level extends the view of the opportunity and at the end an overall view is obtained. Additionally, due to the clear focus on each level an effective use of resources is supported.

Level	Main Focus
Level 0	Business and investment orientation
Level 1	Company overview, level of innovation, potential of product and intellectual property rights
Level 2	Market and feasibility
Level 3	Financial situation, unique selling proposition, market potential, intellectual property rights, risk
Level 4	Management, feasibility and financial attractiveness

Table 3.2: Focus of different rating levels.

Due to the emphasis of the rating levels, different actions as well as interactions take place which are described in the following listing:

Level 0

Level 0 focuses on verifying if the business of the opportunity fits into the aimed investment portfolio.

As pointed out in the 'Opportunity Summary' (see Page 16), the whole process starts with a requested summary of the opportunity. In this level, only the portfolio and the investment focus are checked. As a result, a decision relating to level 1 is made.

Level 1

Level 1 focuses on the organization and management of the opportunity and on existing intellectual property rights as well as on existing business strategies.

After passing the first entry level, an internal verification takes place by using the pre-defined evaluation questions of level 1. This task will be accomplished internally by an evaluator. As a source for the evaluation, the complete opportunity summary of the opportunity and internal knowledge are used.

Level 2

Level 2 focuses mainly on the product, market situation (competition, target groups, etc.), risks and on feasibilities considering product realization and business model.

Main task of this level is an evaluation of the feasibility and the market by using external experts as a feedback source. For this purpose, experts receive an intersection of evaluation questions and the answers are opposed to the internal ones.

Level 3

Level 3 focuses mainly on the financial situation of the opportunity, the unique selling proposition of the product and closely on intellectual property rights as well as strategies.

For the proof of plausibility, a business plan of the opportunity is required. At this level different exit scenarios and monetization options are evaluated. An additional interview with the entrepreneur is optional.

Level 4

Level 4 focuses on the management, the financial attractiveness and if there are internal resources needed in case of an investment.

After this level, all evaluation questions have been answered providing a base for an internal discussion about the potential of the opportunity in a meeting of board members. During this meeting, every board member receives an intersection of evaluation questions that are opposed to the already existing internal evaluation. For a detailed description of the analysis see Page 43.

The emphasis of the internal board meeting is a decision towards investment options, conditions and use of resources. To assist this decision, a presentation by the entrepreneur can take place which should be accompanied by an open discussion.

The following Table 3.3 presents an overview of all five levels:

Level	Emphases of evaluation
Level 0	Opportunity summary Evaluation of business & investment focus
Level 1	Summary of company Internal evaluation by innovation management
Level 2	Extended information of company Focus on feasibility Evaluation by external experts
Level 3	Requesting business plan Proof of plausability Evaluation of exit and monetization options Optional: Interview of entrepreneur
Level 4	Detailed reporting for board members Presentation of opportunity Additional internal evaluation Decision round for investment options, conditions and use of ressources.

Table 3.3: Emphases of different rating levels.

3.2.3 Role of Evaluation

Concerning the concept of rating level phases the interaction with diverse sources is important for the evaluation, because it enables to deal with different views from the inside and outside world. As a result, the whole process is always exposed to a controversial debate with itself, which therefore, acts as a quality assurance mechanism that forms a kind of self-improving system. Hence, the process is designed to question itself in order to learn and to improve.

As a source for a controversial debate, different roles are defined for the evaluation process. The main role will be carried out by an internal resource with experience in the field of innovation management. Especially, this resource will always be confronted with other input sources providing different views about the opportunity. These other sources are external experts, members of the board and even the opportunity itself, represented by an interview or presentation of the entrepreneur.

At each level of the rating levels, the evaluation process receives inputs from diverse sources, which is used to build up a knowledge base of information and to

create an overall picture of the opportunity based on the market situation. The following Table 3.4 shows the input sources at each level:

Level	Input Source
Level 0	Internal resource
Level 1	Internal resource
Level 2	External experts
Level 3	Opportunity (Entrepreneur)
Level 4	Members of board and opportunity

Table 3.4: Input sources for evaluation.

Chapter 4

Evaluation Matrix

In this chapter, the evaluation matrix, which is the core concept of the rating levels, will be described. Furthermore, it will cover the topics how to set up the matrix based on weighting criteria. Finally, the interaction between predefined questions and the weighting factors will be explained.

4.1 Basic Concept

As stated in chapter Introduction (see Page 1), the evaluation process is a concept for evaluating opportunities based on an evaluation matrix. This matrix is employed in the rating levels and consists of weighted questions, grouped into categories which represent different decision criteria. Especially, these criteria are the base for creating a meaningful output as well as for enabling comparisons with other sources. Finally, to receive a representative output, statistical calculations have to be performed.

4.2 How to Group Criteria

To create an evaluation matrix, different criteria have to be selected. For this concept, nine categories related to entrepreneurship & innovations are chosen. In this work the importance of each category is verified by a small survey. The complete result of the survey is shown in Appendix A. For the survey and consequently for the evaluation matrix, the following categories are used:

- Company
- Product
- Market
- Patent
- Management
- Strategies
- Feasibility
- Risk
- Financial Attractiveness

Weighting Factors of Categories

For the survey, ten experts from different business areas (e. g. investment, marketing, management, ...) were interviewed and asked to weigh each category with regard to its importance for investing in a potential internet technology. Each expert could only use one hundred percent in total, which he or she could distribute over the different categories. Finally, an arithmetical mean was calculated over all ten experts. The corresponding result is displayed in Table 4.1.

Category	Result	Standard Deviation	Deviation (perc.)
Company	4.60%	0.79%	21.00%
Product	12.20%	2.49%	20.37%
Market	21.00%	3.16%	15.06%
Patent	0.95%	0.16%	16.64%
Strategies	2.15%	0.75%	34.75%
Management	11.50%	1.58%	13.75%
Feasibility	12.90%	1.45%	11.23%
Risk	15.40%	2.17%	15.00%
Financial Attractiveness	19.30%	2.87%	14.87%
Total	100.00%		

Table 4.1: Result of survey of ten experts.

Additionally to the arithmetical mean, the standard deviation, i.e. a measure of how far the respective values scatter around the mean [AWZ09], as well as the relation between the standard deviation and the mean, represented as deviation in percent, are calculated.

As a result of the interviews, the categories *Market* (21.00%) and *Financial Attractiveness* (19.30%) are considered to be the most important criteria for an opportunity evaluation, whereas *Patent* (0.95%) as well as *Strategies* (2.15%) seem to be less important. Certainly, this small survey is not fully representative but it should only explain how different criteria for an evaluation process can be selected.

To incorporate the results of the survey into the evaluation matrix, the results, represented by a percentage value, are rounded [Wikc] and subsequently form the calculation base for the matrix. Finally, the calculated values represent the weighting factors for the categories which are employed for the evaluation process. The result of this conversion is shown in Table 4.2.

Category	Percentage
Company	5.00%
Product	12.00%
Market	21.00%
Patent	1.00%
Strategies	2.00%
Management	12.00%
Feasibility	13.00%
Risk	15.00%
Financial Attractiveness	19.00%
Total	100.00%

Table 4.2: Weighting of each category.

The bar chart in Figure 4.1 visualizes the distribution of the calculated percentages over the single categories.

Subdividing Categories

After calculating the weighting factors, each category has to be detailed by subdividing into topics. These topics are also weighted with a relative percentage

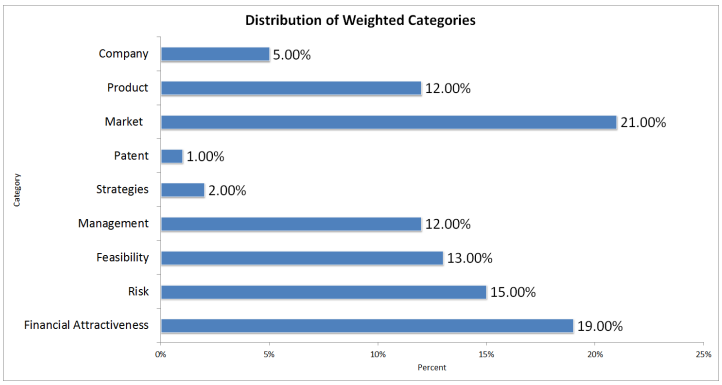

Figure 4.1: Distribution of weighted categories.

value, with a sum of one hundred percent for each category. Moreover, a weighting factor determined for each topic, is calculated in relation to the percentage of the category and represents the importance of a single topic with regard to the total of all topics. The sum of the weighting factors per category is equal to the percentage of the category, and summarized over all categories it amounts one hundred percent. More details can be found in Chapter 6.

In conjunction with the emphasis of the rating levels and the role of evaluation only certain topics are available at different levels. As an example, the category *Company* is considered. For instance, based on the focus of financial attractiveness at level 4 the topics partner & investor structure, financial situation and capital requirements are offered to evaluate. The selection of topics for each level is marked in Table 4.3 with an 'x'.

Company (5.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Company history	10.00%	0.50%	x			x
Organization structure	17.50%	0.88%	x			
Geographical structure	12.50%	0.63%	x			
Partner & investor structure	20.00%	1.00%			x	x
Financial situation	15.00%	0.75%			x	x
Capital requirements	20.00%	1.00%			x	x
Legal status	5.00%	0.25%	x			
TOTAL	100.00%	5.00%	x		x	x

Table 4.3: Example of topics related for different levels for the category *Company*.

In a final step, the topics will be interlinked with rating questions that build the

base for a simple evaluation through internal and external resources.

4.3 Categories and Topics

Creating weighting factors is an essential task in order to calculate a representative result for further analysis. Therefore, each of the selected categories has to be filled with topics which, in turn, have to be marked at which level they are relevant to be considered.

The next pages describe each category by giving an entrepreneurially focused overview. Furthermore, a short characterization and exemplary weighting of the single topics is given.

Category: Company

> "Every organized human activity...gives rise to two fundamental and opposing requirements: the division of labor into various tasks, and the coordination of these tasks to accomplish the activity. The structure of the organization can be defined simply as the ways in which labor is divided into distinct tasks and coordination is achieved among these tasks." [Min93]

Companies exist because they are efficient institutions for the organization of economic activities [Gra08] and are differently structured with diverse tasks and responsibilities. The purpose of an organizational structure is to coordinate and integrate employees at all levels and across functions in order to work and interact together [HJ09]. Any chosen structure (functional, matrix, cluster, etc.) have their advantages as well as disadvantages in relation to customer, market, internal complexity, etc. [Gal95].

For investments, the financial situation and capital requirements are important aspects to look at because the need for capital, especially in an early stage phase, is a critical factor to enter the market. Without any financial support a company is facing serious obstacles on there way to position the product on the market.

The category *Company* focuses on organizational & investment structures, financial situation and expected capital requirement based on the targeted market.

Company (5.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Company history	10.00%	0.50%	x			x
Organization structure	17.50%	0.88%	x			
Geographical structure	12.50%	0.63%	x			
Investment structure	20.00%	1.00%			x	x
Financial situation	15.00%	0.75%			x	x
Capital requirements	20.00%	1.00%			x	x
Legal status	5.00%	0.25%	x			
TOTAL	100.00%	5.00%	x		x	x

Table 4.4: Topics of category *Company*.

The topics of the category *Company* of Table 4.4 focus on:

Company history: Short history briefing about the capability to deal with the market and technology.

Organization structure: Organizational and decision structure of the company.

Geographical structure: Expected needed effort for the current organizational structure.

Investment structure: Distribution of shares of current investment structure.

Financial status: Current situation in relation to capital requirement or bankruptcy.

Capital requirements: Capital requirement in relation to targeted markets.

Legal status: Legal situation of the entrepreneurs.

Category: Product

> "A product is anything that can be offered to a market to satisfy a want or need." [KK09]

Creating a unique product can be achieved by always looking at the customer needs in such a way that he or she really tends to buy it. This can be achieved by using product differentiation, so that consumers prefer it more compared to the competition because it satisfies their needs.

For sustainable products, different aspects like competitive advantages [Por98a], pricing and scalability are important. Especially, pricing is a difficult task and besides consumer psychology, several other factors like costs, margin and competition have to be taken into account [AHM07]. For setting up a price for a product, a company must also consider many environmental factors [DZB00]. Kotler recommends six steps for setting it up (price objective, determine demand, estimate costs, analyze competition, select pricing method and select final price) [KK09].

The beginning of any product is an idea that needs further development and refinement. The product development can be divided into five major steps (idea, concept, development, testing and commercialization) and represents an additional important factor of success [HP91].

The category *Product* focuses on pricing and market situations as well as how flexible the product portfolio is positioned (scalable, cyclical).

Product (12.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Level of innovation	10.00%	1.20%	x	x		
Pricing	10.00%	1.20%		x		
Market acceptance	20.00%	2.40%		x	x	
Customer value	20.00%	2.40%	x	x	x	
Portfolio - composition	10.00%	1.20%		x		
Portfolio - cyclical	10.00%	1.20%		x		
Portfolio - scalable	20.00%	2.40%		x		
TOTAL	100.00%	12.00%	x	x	x	

Table 4.5: Topics of category *Product*.

The topics of category *Product* of Table 4.5 focus on:

Level of innovation: A new or already existing product or a mixture of both.

Pricing: Pricing compared to competition.

Market acceptance: Current market acceptance and possible improvements.

Customer value: Expected customer value for the target market.

Portfolio - composition: Product focus or product plurality.

Portfolio - cyclical: Dependency of cyclical market situations.

Portfolio - scalable: Scalability to changing market situations.

Category: Market

> "A market consists of all the potential customers sharing a particular need or want who might be willing and able to engage in exchange to satisfy that need or want." [Kot91]

Besides the overall definition, there are several different segmentations like geographic markets, product markets, consumer markets, etc. Because not all markets can be satisfied, a so-called STP process (segmentation, targeting and positioning) can be used [KK09]. Hence, the essential parameters like competition, target customers, time-to-market, etc. are clearer to define and the market is easier to calculate. Therefore, a market definition of a business can even be seen to be superior to a product definition, based on an argument from Theodore Levitt [Lev60].

For identifying the competition forces in an industry, it is important to analyze the environment. A basic approach is Michael E. Porter's five forces model [Por98b] about the dynamics of an industry and the factors inside the microenvironment that influences it in relation to the competition. However, Andrew S. Grove stated that there is a sixth force, introducing the concept of complementors [Gro99]. These are companies offering products that complement the products of other companies resulting in an increase of value and a better customer satisfaciton [HJ09].

Besides the market and the competition, the time-to-market aspect plays an additional role for investments and the use of resources, especially, because of to the increasing intensity of global competition [CF06]. However, time-to-market has also a strong impact on technological product development and the targeted geographical markets, because in particular technology-intensive companies are often focusing on the global market [Joh05].

The category *Market* focuses on essential elements for entering a product into a targeted market.

Market (20.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Potential - present & future	23.00%	4.60%	x	x		
Market volume	22.00%	4.40%		x	x	
Target groups	15.00%	3.00%		x	x	
Competition	20.00%	4.00%	x	x	x	
Targeted market	5.00%	1.00%	x	x	x	
Time to market	15.00%	3.00%	x	x		
TOTAL	100.00%	20.00%	x	x	x	

Table 4.6: Topics of category *Market*.

The topics of category *Market* of Table 4.6 focus on:

Potential - present & future: Market potential based on internal experiences and expectations.

Market volume: Focus of the market growth.

Target groups: Potentials of targeted customer.

Competition: Type of competition and its strength.

Targeted market: Size of targeted market.

Time to market: Time to enter targeted markets.

Category: Patent

> "A patent is a contract between the government and an inventor. In exchange for disclosure of the innovation, the government grants the inventor exclusivity regarding the invention for a specified time. At the end of this time, the government publishes the invention and it becomes part of the public domain." [HPS10]

Companies often rely on intellectual property rights, especially patents, to earn return on their investments but they are also confronted with defending their intellectual property [SGF09].

The effectiveness of a protection depends often on the type of technology. Additionally, research found out that some innovators think that patents are not

useful enough for an adequate protection mechanism [vH06]. Furthermore, obtaining a patent is very cost intensive and can take a long period of time to get granted [HHvH03].

The category *Patent* focuses on existing of patents and their level of protection.

Patent (1.0%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Existing / not existing	50.00%	0.50%	x		x	
Avoidance patent	10.00%	0.10%	x		x	
Patent strategy	15.00%	0.15%	x		x	
Geographical areas	15.00%	0.15%	x		x	
Period of validity	10.00%	0.10%	x		x	
TOTAL	100.00%	1.00%	x		x	

Table 4.7: Topics of category *Patent*.

The topics of category *Patent* of Table 4.7 focus on:

Existing / not existing: Availability and status of granted patents.

Avoidance patent: Availability and status of granted avoidance patents.

Patent strategy: Existence of a patent strategy.

Geographical areas: Geographical protection of patents.

Period of validity: Duration of patents validity.

Category: Strategies

Michael E. Porter stated that a strategy is not about doing things better, it is about doing things differently. Therefore, a strategy is about making a choice. [Por96]. For a company, it is about choosing actions and decisions to achieve a defined goal, whereas choices include fundamental questions as where and how to compete [Gra08].

An important strategy of a company is the competitive strategy that focuses on being different and how to compete in its business environment [Por98b]. To be successful in a market, a business strategy with clear defined goals and steps is a foundation to deal with changing market demands [Tee10].

To position a product on the market, distribution is an important aspect in order to reach the customers and to create awareness. Therefore, for a good distribution strategy the channel selection is essential, whereas the focus has to be on the degree of directness, the number of channel members and the selection criteria [HPS10].

The category *Strategies* focuses on whether a business or distribution strategy exits as well as how realistic it is.

Strategies (2.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Business strategy	50.00%	1.00%	x		x	
Distribution strategy	50.00%	1.00%	x		x	
TOTAL	100.00%	2.00%	x		x	

Table 4.8: Topics of category *Strategies*.

The topics of category *Strategies* of Table 4.8 focus on:

Business strategy: Defined strategy as well as goals and milestones.

Distribution strategy: Existing distribution strategy and channel selection.

Category: Management

To be successful in entrepreneurship and management you need a good knowledge base, experience and you should be a visionary leader with emotional skills, which Daniel Goleman describes as follows: "IQ and technical skills are important, but emotional intelligence is the sine qua non of leadership" [Gol98]. But emotion is also related with recognition and expression, which means that an effective leader needs to recognize and to reflect emotions back to his or her employees [RMB05].

As a leader, it is also important to reflect his or her own behaviors within the company in order to prevent the set-up-to-fail syndrome that can result in emotional and organizational costs [MB98].

The category *Management* focuses on experiences and qualifications of the entrepreneur and how much the success of company is influenced by their presence.

Management (12.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Relevance for success	50.00%	6.00%			x	x
Spirit of entrepreneurs	20.00%	2.40%	x			x
Professional qualification	30.00%	3.60%	x		x	x
TOTAL	100.00%	12.00%	x		x	x

Table 4.9: Topics of category *Management*.

The topics of category *Management* of Table 4.9 focus on:

Relevance for success: Dependence on success in relation to the existing management.

Spirit of entrepreneurs: Experience and potential of entrepreneurs.

Professional qualification: Lack of knowledge that has to be compensated.

Category: Feasibility

Feasibility deals with resources that are necessary to implement a product or business of a company. Also a criterion is how difficult the implementation in relation to quality and quantity of resources, management and financial requirements is [SCJ10].

The category *Feasibility* focuses on already existing assets in the company and on what is still needed to be successful on the market. This information is relevant for a forecast of financial expenses and organizational efforts.

Feasibility (13.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Technological	40.00%	5.20%	x	x		
Business model	40.00%	5.20%		x	x	x
Human resources	20.00%	2.60%				x
TOTAL	100.00%	13.00%	x	x	x	x

Table 4.10: Topics of category *Feasibility*.

The topics of category *Feasibility* of Table 4.10 focus on:

Technological: Period of implementation in combination with capital demand.

Business Model: Existing business model in relation to feasibility.

Human resources: Availability of resources and requirement of additional needs.

Category: Risk

No matter how much effort a company puts into their implementations, there is always a risk something unusual or unexpected could happen which would cause significant problems for a company. The risk can be minimized by using risk management, a process to address risks attaching to activities with the goal of achieving sustained benefit within each and all activities [Ris02].

For an entrepreneur risk is the probability, and magnitude, of downside loss [RCL99] that could end in bankruptcy. This is often a result of missing knowledge about the business fields (market needs, competitors, etc.) and the technological development [HPS10].

The category *Risk* focuses on economic and technological risk factors as well as on risk reduction actions.

Risk (15.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Technological	40.00%	6.00%		x	x	
Economic	60.00%	9.00%		x		x
TOTAL	100.00%	15.00%		x	x	x

Table 4.11: Topics of category *Risk*.

The topics of category *Risk* of Table 4.11 focus on:

Technological: Technological risk level based on the current situation of the opportunity.

Economic: Business risk level in relation to the knowledge of the management based on the business plan.

Category: Financial Attractiveness

Alexandre Dumas quote "Business? It's quite simple. It's other people's money" put aptly the way how business, and consequently investment, works.

Sufficient returns at acceptable risk, this is what investors attract [Ves89] who are seeking for potential opportunities. However, the cost of an investment depends on the different business development phases of an opportunity, whereas an early-stage requires less capital than an acquisition or leveraged buyout [HPS10]. Every phase has its own risks and challenges to deal with, but also offers different returns on investment [BMA08].

For both, the entrepreneur and the investor, the exit strategy for an opportunity has a high priority because it is the way how the money will be made. Exit strategies are initial public offerings (IPO), trade sale, total return, etc. But, both sides have their differences about the development of the company, for instance, venture capitalists would often like to see a cash-out in a few years whereas the entrepreneur is more focused on getting its venture going [SB03].

The category *Financial Attractiveness* focuses on exit strategies and expected returns on investments:

Financials (20.00%)	Relative	Weighting Factor	Level 1	Level 2	Level 3	Level 4
Exit Options	30.00%	6.00%			x	x
Return on investment	50.00%	10.00%			x	x
Investment structure	20.00%	4.00%			x	
TOTAL	100.00%	20.00%			x	x

Table 4.12: Topics of category *Financial Attractiveness*.

The topics of category *Financial Attractiveness* of Table 4.12 focus on:

Exit Options: Possible exit strategies for the opportunity.

Return on investment: Expected returns on investment.

Investment structure: Different investment structures based on the required capital.

4.4 Rating Questions

After defining the categories and their weighting factors, which are based on expected relevancies for the evaluation, the single topics of the categories have

to be interlinked with questions to enable an easy interaction for evaluators. Therefore, each topic is correlated with a question, for which four optional answers with a different score are offered. In order to constrain an evaluator to make a clear decision, the value of 3 is left out. Therefore, only the values of 1, 2, 4 and 5 are available.

Questions for Category Company

Table 4.13 gives a description of questions related to the category *Company* on Page 26.

Question	5	4	2	1
Company history: *How does history as well as management experience fit the located market?*	Very well	Enough experience but needs support	Not enough experience but developable	Not enough history and management experience
Organization structure: *How is the company organized?*	Flat hierarchical structure with 1-2 decision makers	Deep hierarchical structure with 1-2 decision makers	Distributed structure with well defined decision makers	Deep hierarchical structure with a lot of decision makers
Geographical structure: *How is the geographical structure of the company?*	Centralized structure with geographically distributed subsidaries	Distributed structure with well coordinated organizations	Structure which needs some reorganization effort	Distributed structure with high effort to coordinate
Partner & investor structure: *Are there any investors in the company?*	No investors	A few investors with small investments	Small investors with high investments	A lot of investors (situation unclear)
Financial situation: *How is the current financial situation of the company?*	Well financied, low risk, no debts and turnovers	No turnovers	Near cashout - company does not have enough equity	Company insolvency
Equity requirements: *How high is the capital requirement?*	Low or according to market conditions - with strong market potential	High with strong market potential	Low with smaller (targeted) market potential but expandable	Too high for the targeted market
Legal status: *Do the owners have have the rights on the product / copmpany?*	They have all the rights and the rights are clarified	They have the rights which are necessary for an active market cultivation	Rights are only partly available and still have to be clarified	No rights are clarified at the moment

Table 4.13: Evaluation questions of category *Company*.

Questions for Category Product

Table 4.14 gives a description of questions related to the category *Product* on Page 27.

Question	5	4	2	1
Level of innovation: *What is the level of innovation?*	High and the product is developed by the company	High and the product is extended by the company (potential of a complementary asset)	Good and the product is developed out of existing technologies on the market	Low and the product is already facing existing innovations on the market
Pricing: *Relation between price and service offer?*	Better product than competition (with low price)	Better product than competition (with equal price)	Better product than competition (but higher price)	Same product as competition (with lower price)
Market acceptance: *What is the expected market acceptance?*	Very high expected acceptance	By having some modifications on the product, good acceptance is expected	Changing some company structure could lead to a good acceptance	At the moment low acceptance is expected
Customer value: *Does it have a clear benefit for the customer?*	High expected benefit	Benefit exists but has to be worked out more precisely	Benefit is not really definded	At the moment low customer benefit expected
Portfolio - composition: *How well are products differentiated?*	Clear, well differentiated and focused	A lot of products, but well differentiated	A lot of products, but not well differentiated	At the moment too many products in the portfolio of the company
Portfolio - cyclical: *How cyclically dependent is the product?*	Not very much	Less cyclically dependent	Needs some portfolio changes to be not or less cyclical	Strong cyclically dependent
Portfolio - scalable: *How easily is the product scalable?*	Easily scalable without any deepen modifications	Some small efforts are needed to be scalable	A lot of efforts are needed to be scalable	Not scalable at the moment

Table 4.14: Evaluation questions of category *Product*.

Questions for Category Market

Table 4.15 gives a description of questions related to the category *Market* on Page 29.

Question	5	4	2	1
Potential - present & future: *What is the expected present & future potential?*	Both are very high	High future and expandable present potential	High present potential	Low potential but expandable
Market volume: *How does the market develop?*	High growth	Good growth	Moderate growth	Smaller growth and stagnation
Target groups: *What is the expected potential of the target groups?*	High potential of clear defined target groups	High potential, but targeted groups not well segmented	Good potential with a better selection of the target group	Targeted group does not have a high potential
Competition: *What kind of competition is expected?*	No direct nor indirect	No direct but indirect	Direct but weak competition	Direct and strong
Targeted market: *What is the aimed market?*	Global market	Continental market	National market	Regional or local market
Time to market: *What is the expected time for a market entry?*	Less than a year	Between 1 and 2 years	Between 3 and 5 years	More than 5 years

Table 4.15: Evaluation questions of category *Market*.

Questions for Category Patent

Table 4.16 gives a description of questions related to the category *Patent* on Page 30.

Question	5	4	2	1
Existing / not existing: *Do patents for the products exist?*	Yes	Not granted so far	Not for the core product	No
Avoidance patent: *Does an avoidance patent exist?*	Yes	Not granted so far	Not for the core product	No
Patent strategy: *Is a patent strategy defined?*	Yes	A basic strategy is available	Yes, but not adequate	No
Geographical areas: *Where do patents exist?*	For international and global markets	For local and neighboring markets	In the country where the company is operating	Nowhere
Period of validity: *What is the validation of the core patent?*	More than 10 years	Less than 10 years	Less than 5 years	Expired or not existing

Table 4.16: Evaluation questions of category *Patent*.

Questions for Category Strategies

Table 4.17 gives a description of questions related to the category *Strategies* on Page 31.

Question	5	4	2	1
Business strategy: *Does a business strategy exist?*	Yes and executable	Yes, but has to be optimized	Yes, but not realistic	There is no adequate strategy available
Distribution strategy: *Does a distribution strategy exist?*	Yes and executable	Yes, but has to be optimized	Yes, but not realistic	There is no adequate strategy available

Table 4.17: Evaluation questions of category *Strategies*.

Questions for Category Management

Table 4.18 gives a description of questions related to the category *Management* on Page 32.

Question	5	4	2	1
Relevance for success: *How much does the success of the company depend on entrepreneurs or management?*	Success is generally independent	Depends on one or all of the entrepreneurs	Depends on the general management	Depends on the management structure
Spirit of entrepreneurs: *How experienced is the entrepreneur?*	Has a lot of experience and a strong personality	Less experienced but strong personality	High potential of management skills, but need to be developed	Lower potential of management skills and less experienced
Professional qualification: *How well is the entrepreneur qualified to lead the company?*	Highly qualified	Well qualified	Needs support	Not well qualified

Table 4.18: Evaluation questions of category *Management*.

Questions for Category Feasibility

Table 4.19 gives a description of questions related to the category *Feasibility* on Page 33.

Question	5	4	2	1
Technological: *How much effort does the product need for a market entry?*	Small effort with a short implementation period	High effort with a short implementation period	Small effort with a long implementation period	High effort with a long implementation period
Business model: *Does an adequate business modell exist?*	Yes	Yes, but it has to be improved	Yes, but it has to be changed	No
Human resources: *Are there any human resources needed for a market entry?*	All resources available	Necessary resources are available but have to be increased later on	Some resources are available but more resources are required to improve the product	Some or no ressources available - additional support is needed

Table 4.19: Evaluation questions of category *Feasibility*.

Questions for Category Risk

Table 4.20 gives a description of questions related to the category *Risk* on Page 34.

Question	5	4	2	1
Technological risk: *How high is the technological risk?*	Small risk	A risk which is manageable	Risk which can be prevented with use of resources	High risk
Economic risk: *How high is the economic risk?*	Small risk	A risk which is manageable	Risk which can be prevented with use of resources	High risk

Table 4.20: Evaluation questions for category *Risk*.

Questions for Category Financial Attractiveness

Table 4.21 gives a description of questions related to the category *Financial Attractiveness* on Page 34.

Question	5	4	2	1
Exit Options: *What kind of exit options are possible?*	Trade sale	IPO	Total return	Earn out
Return on Investment *When is the return on investment expected?*	Less than 2-3 years	Less than 4 years	Less than 6 years	At the moment a predictable forecast is difficult
Investment structure: *What kind of investment structure is needed?*	Risk share	Co-investment over 33%	Co-investment less than 33%	Minority shareholding

Table 4.21: Evaluation questions for category *Financial Attractiveness*.

Chapter 5

Optimization using Feedback

This chapter briefly describes the purpose of an internal and an external feedback mechanism and gives a short overview of available sources that can be used.

5.1 Basic Concept

A challenging task of the evaluation process is the development of a concept for the interaction with controversial views from diverse sources, resulting in a learning and optimization feedback for the whole process. The idea is to have a constant improvement by having direct confrontations based on different opinions. Thus, the evaluation process has to permanently question itself, which can lead to a change of opinion for certain topics. This reconsideration of already existing results is part of the rating level concept that focuses on a stepwise refinement of each level with the goal to have a combined evaluation at the end.

Diverse sources are essential for improving the process of evaluation. To receive meaningful opinions, at least four different sources should be contacted which are described in Table 5.1.

All these sources are part of a feedback mechanism that tries to approach its evaluation process in line with current market requirements and trends.

Even the opportunity itself can play a role for optimizing the process. The rating levels provide the possibility to interview the entrepreneur and to directly discuss topics during a presentation of the opportunity. Thus, points of view on different categories can be changed based on new knowledge.

Source	Roles
Internal	Innovation Manager
External	Experts from different areas (marketing, business development, etc.)
External	Market opinion represented by lead users
Mixture	Advisory board, board of members

Table 5.1: Different sources for feedback

5.2 Internal Feedback

The internal feedback can be received through colleagues within the company who are involved in an evaluation process with other opportunities (excerpt of questions). Additionally, members of a board who decide about the investments can also contribute. Especially, their feedback can be regarded as a verification of the evaluation output and as a relevant opinion that can be used to optimize the process.

5.3 External Feedback

5.3.1 Experts

For the feedback mechanism, experts represent the role of an academic as well as a business view. But, it is important to select a mixture of experts which covers diverse fields with different focuses in order to receive a meaningful opinion. The goal is to receive controversial views that challenge the evaluation process.

5.3.2 Customer & User

Customer & user represent the demands and needs of a market. Therefore, their opinions and perspectives are integrated into the evaluation process through direct feedback, which is obtained by offering the possibility of online rating of the opportunity (selection of questions). There are three types of potential customers that have to be identified: internet users, early adopters and lead users.

Internet Users

Internet users can be regarded as the general consumer base characterizing their opinions and needs by interacting in online communities like Facebook and Twitter. Therefore, a direct contact can be accomplished by using these community platforms as a feedback channel where the general interests of this group can be identified. Generally, the internet users represent the mass market potential.

Early Adaptors

Early adopters are early customers that embrace new products before others do. They like to test products in an early phase and are eager to explore new options [God05]. Therefore, they represent the group of trendsetter.

Lead Users

> "Lead users are defined as members of as user population having two distinguishing characteristics: (1) They are at a leading edge of an important market trend(s),...(2) They anticipate relatively high benefits from obtaining a solution to their needs." [vH06]

Lead users are an interesting group to receive feedback because they have a strong focus on their personal needs by grappling with a product that sometimes can result in a modification of the product. With their experience, an evaluation process can profit by dealing with their leading edge role and by interacting with their way of developing innovative products.

Chapter 6

Analysis of Data

This chapter explains the basic concept how the data from the evaluation matrix is analyzed in order to receive interpretable results with an additional focus on differences between internal and external views. The applied calculation principles are demonstrated by an example based on the data from Appendix D and E.

6.1 Calculation Principles

The analysis of data for a statistical assessment of the opportunity is based on the weighting factors related to the answered questions from the rating levels, as described in Chapter 4. During the process of evaluation the data will be gradually improved through external and internal sources. The result of the evaluation process is a kind of SWOT [HS78] (strengths, weaknesses, opportunities and threats) analysis of the opportunity.

6.1.1 Basic Concept

The evaluation matrix consists of several rating level questions offering four given answers with a varying amount of points. Rating is done by selecting an answer that results in a score where the first answer has a value of five points (highest rating), the second four points, the third two points and the fourth one point (lowest rating).

As each question has a different importance for the rating process, the score for each answer has to be modified by an appropriate weighting.

In order to obtain an appropriate weighting for an answer for each question, the selected score is divided by the number of maximum points (i.e., by five) and is multiplied by the corresponding weighting factor (see Chapter 4). Hence a so called "absolute percent" is calculated which represents the contribution of each single question to the whole rating. If for all questions the maximum number of points is given, the sum of the absolute percent will also amount one hundred percent.

For further evaluation, in addition the ratio between absolute percent and weighting factor is calculated, which shows the percentage how much of the maximum rating value is obtained for each question.

Table 6.1 shows a calculation based on weighted questions.

Points (selected)	Points (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
4	5	0.88%	0.70%	80.00%

Table 6.1: Calculation example for weighted questions.

6.1.2 Internal Results

Analysis of the internal rating is performed for the different categories. Therefore, the absolute percent for the single questions are summarized for each category. The results are displayed as bars where they reached absolute percent for each category are displayed at the bottom (marked in Figure 6.1 as blue bar). In addition, the difference with regard to the maximum reachable value for a category is shown at the top (marked in Figure 6.1 as red bar). From this kind of diagram categories with low rating can be identified at a glance.

6.1.3 Experts Data

External experts receive only an intersection of selected categories which are *Market*, *Product* and *Risk*. Because a number of experts are consulted, always the average of the values of the experts is used for the analysis.

In order to detect any major deviations between the external and internal rating results, a comparison is performed. Therefore, the absolute percent reached (a.p.r.) are summarized for each of the three categories. This is done for the external as well as the internal rating values. The results are displayed in two separate graphs (external and internal) as bars (marked in Figure 6.2 and 6.3 as blue) for the single categories, in combination with the difference to the maximum achievable absolute percent (marked in Figure 6.2 and 6.3 as red).

Deviations between the internal and external view become immediately visible when the difference between the external and internal values is calculated for each category. The differences are displayed relative to the internal values (i.e., in %) in a bar graph (see Figure 6.4). A positive value means a better rating by experts compared to the internal view, whereas for negative values the internal rating is better for the respective category.

When for a category pronounced deviations between internal and external rating are found, the same comparison can be performed on the level of the single questions of this category. Then, the differences between the single questions of the external and internal absolute percent are calculated as described above. From this it can be seen if the deviation is due to a single question or is equally distributed over all questions of the category.

Because a number of experts are consulted, also the uniformity of the rating is of interest. For the average values the standard deviation can be calculated for each category, which is displayed as error bars in the corresponding bar graph (see Figure 6.2). The length of the error bar represents how much the external experts agree whereas a short error bar indicates that the experts gave a uniform rating for the category, a large error bar means that rating of the experts highly differs for the category.

6.2 Analysis by Example

In order to visualize the concept of data analysis an example based on the data of Appendix D and E is used.

6.2.1 Initial Situation

According to the rating level concept an opportunity was evaluated by assigning points to all questions. The lists of all topics and the results of the evaluation are presented in Appendix D.

6.2.2 Evaluating Opportunity

After answering all evaluation questions a statistical view is calculated by using the calculation principles explained on Page 43. Table 6.2 shows the results for each category in the following three data columns:

- Absolute percent reached (a.p.r.): The reached absolute percent for a category.
- Difference to maximum (difference to max.): The gap between the reachable maximum and the reached absolute percent for a category.
- Maximum in percent (max percent): The maximum of reachable percent (i.e.,the weighting factor of a category)

Category	a.p.r.	Difference to max.	Max. percent
Company	4.83%	0.18%	5.00%
Product	9.60%	2.40%	12.00%
Market	13.80%	6.20%	20.00%
Patent	0.75%	0.25%	1.00%
Strategies	1.80%	0.20%	2.00%
Management	10.80%	1.20%	12.00%
Feasibility	3.64%	9.36%	13.00%
Risk	13.80%	1.20%	15.00%
Financial Attractiveness	11.60%	8.40%	20.00%

Table 6.2: Result of internal evaluation.

In addition Figure 6.1 visualizes the results in bar charts.

With respect to the interpretation of this evaluation example the opportunity has a fairly good market potential, a strong product and the financial attractiveness is above average with very low risk rates.

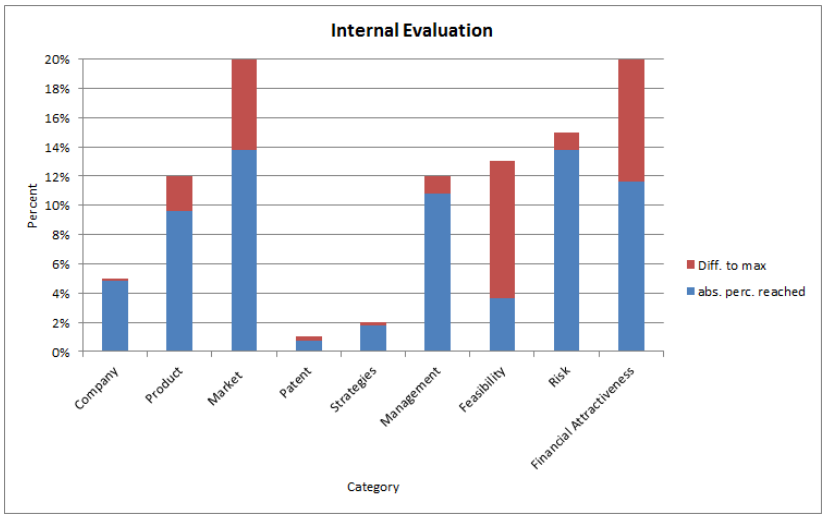

Figure 6.1: Distribution of internal evaluation.

6.2.3 Feedback from Experts

Additionally, to the internal view, five external experts were consulted to express their opinion on the potential of the opportunity by answering questions about the categories *Product*, *Market* and *Risk*. The result of this external evaluation is presented in Table 6.3 in the following columns:

- Average a.p.r.: Arithmetical mean of absolute percent reached of all experts.
- Standard deviation: Absolute standard deviation of all experts.
- Difference to maximum: Difference to maximum reachable absolute percent of a category (i.e., its weighting factor).

Category	Average a.p.r.	Standard deviation	Difference to max.
Product	7.01%	1.09%	4.99%
Market	12.22%	2.29%	7.78%
Risk	14.28%	0.66%	0.72%

Table 6.3: Result of external evaluation by experts.

Figure 6.2 visualizes the result of the external evaluation in bar charts and additionally depicts to which extent the experts agreed to each other, which is

indicated as error bars in the corresponding bar graph.

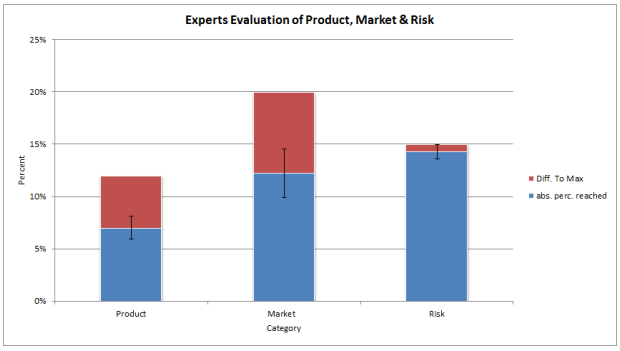

Figure 6.2: Distribution of external evaluation by experts.

For comparison, the results of the internal view on the three categories is shown in Figure 6.3.

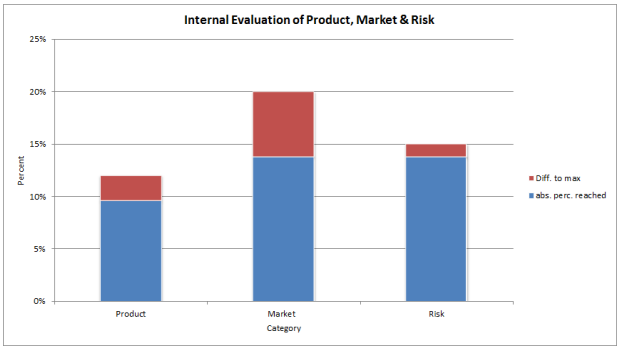

Figure 6.3: Distribution of internal evaluation.

As a result, the experts are more skeptical about the product situation, show stronger differences within the category *Market*, but the risk expectations are also very low.

6.2.4 Comparison of Categories

In order to visualize the differences between the internal and external view, the data of both evaluations have to be put to contrast which is shown in Table 6.4. The most representative column in this table is the deviation between the internal and external view in percent (deviation in perc.). This describes how strong the external opinions differ from the internal view. Table 6.4 contains of the following columns:

- Absolute percent reached (a.p.r.) internal: Taken from Table 6.2.
- Absolute percent reached (a.p.r.) experts: Taken from Table 6.3.
- Deviation in percent: The difference between the absolute percent reached internal and of the experts, related to the absolute percent reached internal.

Category	Internal a.p.r.	Experts a.p.r.	Deviation in perc.
Product	9.60%	7.01%	-27.00%
Market	13.80%	12.22%	-11.42%
Risk	13.80%	14.28%	+03.48%

Table 6.4: Comparison of categories.

From visualizing the differences between both views in Figure 6.4 it can be seen that the external experts recognize less potential for the product and market, whereas stronger differences are found in the category *Product*. However, compared to the internal view the external experts expect a lower risk rate.

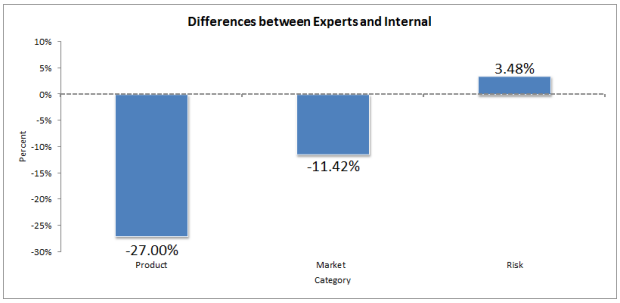

Figure 6.4: External vs. internal views.

To find out in which topic of the category the experts differ, a closer look has to be taken at the results of each answered question, described in the next section.

6.2.5 Comparison of Topics

In case of existing differences between internal and external results, it is necessary to perform the same comparisons as done before for the categories on the level of the topics of each category. In the following, this procedure is shown exemplarily for the three categories *Product*, *Market* and *Risk*.

Product

Table 6.5 and Figure 6.5 display possible product differences of the opportunity.

Product	Internal a.p.r.	Experts a.p.r.	Difference in percent
Level of innovation	0.96%	0.91%	-5.00%
Pricing	0.96%	0.82%	-15.00%
Market acceptance	1.92%	1.92%	0.00%
Customer value	1.92%	1.15%	-40.00%
Portfolio - composition	0.96%	0.58%	-40.00%
Portfolio - cyclical	0.96%	0.96%	0.00%
Portfolio - scalable	1.92%	0.67%	-65.00%
Total	9.60%	7.01%	-27.00%

Table 6.5: Internal vs. external views of category *Product*.

According to the result of the experts the product (-27%) has the highest difference compared to the internal view. However, a closer look into the category *Product* shows that the differences are mainly concentrated on the topics customer value (-40%), portfolio composition (-40%) and portfolio scalability (-65%). Although all three topics indicate a high value, practically the customer value is the most important aspect for the product because without a clear customer value it is difficult to position a product on the market.

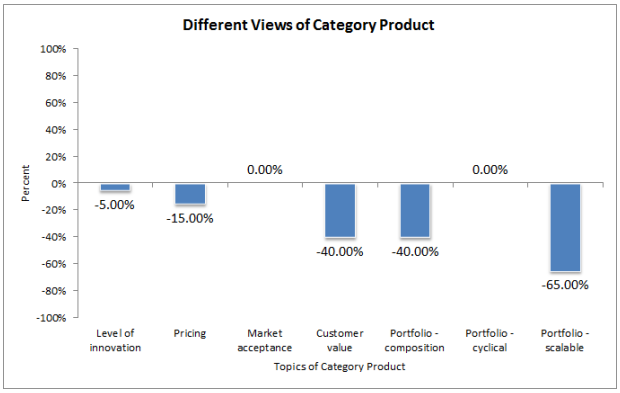

Figure 6.5: View relations of category *Product*.

Market

Table 6.6 and Figure 6.6 display possible market differences of the opportunity.

Market	Internal a.p.r.	Experts a.p.r.	Difference in percent
Potential - present & future	3.68%	3.86%	+5.00%
Market volume	3.52%	2.64%	-25.00%
Target groups	3.00%	2.28%	-24.00%
Competition	0.80%	1.12%	+40.00%
Targeted market	0.40%	0.40%	0.00%
Time to market	2.40%	1.92%	-20.00%
Total	13.80%	12.22%	-11.42%

Table 6.6: Internal vs. external views of category *Market*.

For the market, the experts expect the opportunity to have a stronger position than its competition (+40%) and see a slightly higher potential (+5%). But, there are some doubts about the time-to-market (-20%), market volume (-25%) and the targeted groups (-24%).

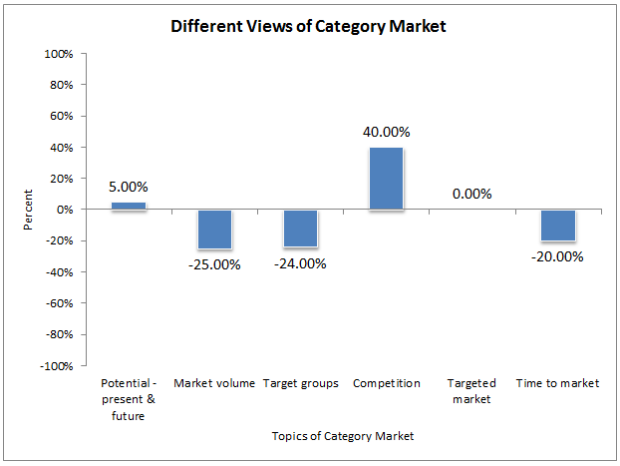

Figure 6.6: View relations of category *Market*.

Risk

Table 6.7 and Figure 6.7 display possible risk differences of the opportunity.

Product	Internal a.p.r.	Experts a.p.r.	Difference in percent
Technological	4.80%	5.28%	+10.00%
Economic	9.00%	9.00%	0.00%
Total	13.80%	14.28%	3.48%

Table 6.7: Internal vs. external views of category *Risk*.

As in Table 6.7 stated both views expect a low risk rate whereas the experts see a slightly lower technological risk (+10 %) for the technology.

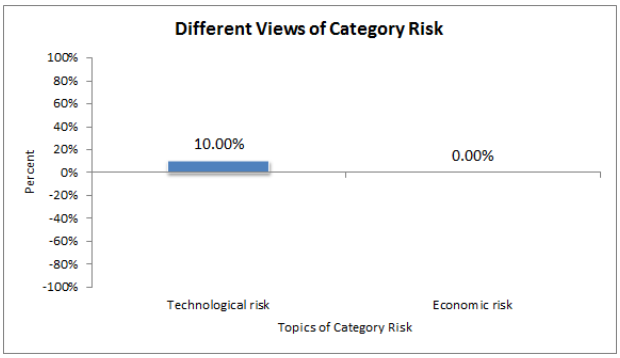

Figure 6.7: View relations of category *Risk*.

6.2.6 Characteristic Factor

As addressed above, significant differences between internal and external results have to be examined at the level of topics and not only between categories. However, besides the relative deviation between internal and experts view as described above, it is also relevant how the deviations are related to the overall importance of the regarded topics, i.e., their weighting factors. In that case, the regarded topics need to be put in relation to each other, and the relevance of a deviation is assessed by the weighting factors. The result is a characteristic factor indicating the relevance of a difference, which can be compared between all topics, where the highest value represents the most relevant difference.

The calculation of the characteristic factor is based on the formula of normalization (see Formula 6.1) which enables to make results comparable with distinct bases [Wikb].

$$v' = (v - min) \times \frac{max_{norm} - min_{norm}}{max - min} + min_{norm} \tag{6.1}$$

By adapting the normalization formula, the characteristic factor for topic i can be calculated by multiplying 100% divided by the sum of all weighting factors of the selected categories j with the differences between internal and external results of the respective topic i and with the weighting factor of topic i, for instance level of innovation (see Formula 6.2).

$$Factor_i = \left(\left(\frac{100}{\sum weighting_j} \right) \times differences_i \times weighting_i \right) \tag{6.2}$$

Table 6.8 shows the calculated characteristic factors of the external topics based on the example data from Appendix E. It can be seen that there is a strong difference for the topics time-to-market (4.16), competition (3.40) and portfolio scalability (3.32) between internal and external views.

Topic of Categories	Characteristic Factor
Level of innovation	0.13
Pricing	0.38
Market acceptance	0.00
Customer value	2.04
Portfolio - composition	1.02
Portfolio - cyclical	0.00
Portfolio - scalable	3.32
Potential - present & future	0.49
Market volume	2.34
Target groups	1.53
Competition	3.40
Targeted market	0.00
Time to market	1.28
Technological risk	1.28
Economic risk	0.00

Table 6.8: Characteristic factors of external topics.

These calculated characteristic factors, in comparison with the approach of only looking at the relative differences in the single topics (see Page 49), represent an overall view of the relevance of the differences of the topics, preventing any wrong

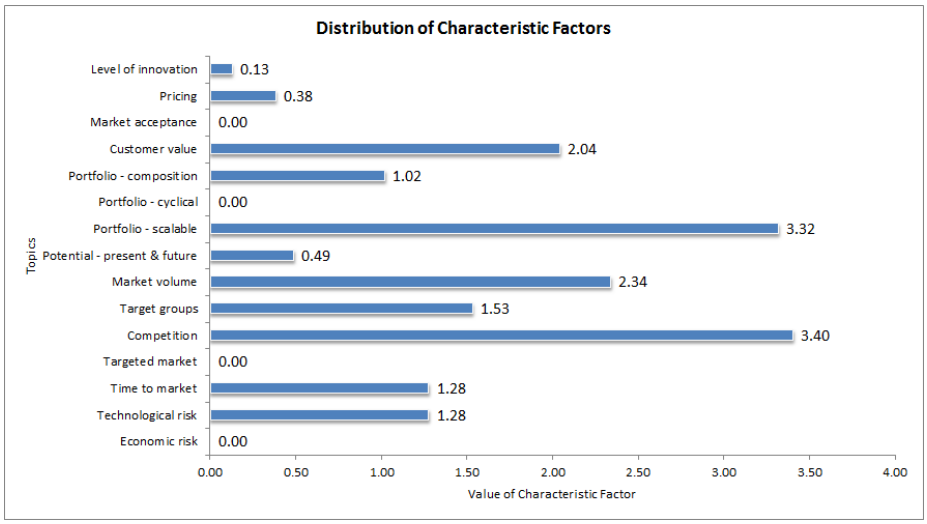

Figure 6.8: Distribution of characteristic factors.

or missing interpretations. For instance, there is a possibility that the market volume, with the third highest characteristic factor of 2.34 (see Figure 6.8), could not receive the attention of the evaluator because the result of the previous step, shown in Figure 6.9, depicts stronger differences for portfolio scalability (-65%), portfolio composition (-40%) and competition (+40%) opposite to market volume (-25%).

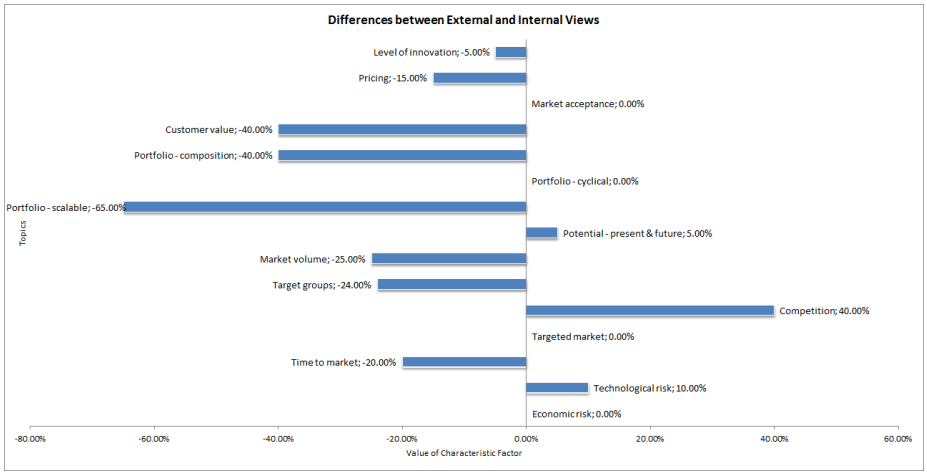

Figure 6.9: View relations of external categories: *Market*, *Product* and *Risk*.

6.2.7 Next Step

Due to the fact that the resulting data of the opportunity evaluation is capable of being stored in a database, it can also be employed for comparisons. This means that any step of the evaluation can be opposed to previous evaluations in order to see where the actual opportunity is positioned compared to all other opportunities. However, for selecting comparable opportunities, some limitations have to be considered like similar business field, similar technological area, targeted markets, etc.

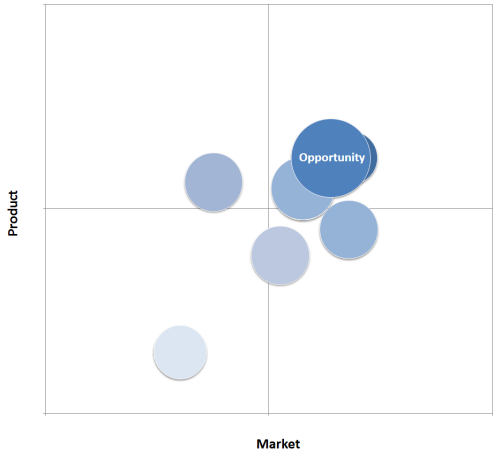

Figure 6.10: Comparison with other opportunities.

Figure 6.10 visualizes a possible comparison with other opportunities using a bubble chart, representing a statistical view based on three attributes. In this example the factors are market (x-axis), product (y-axis) and financial attractiveness (thickness of the bubble). Concerning the interpretation, an opportunity has a stronger impact with regard to product and market if the bubble is located in the upper right corner, and the financial attractiveness is stronger if the bubble is thicker.

Chapter 7

Complementary Evaluation

This chapter gives a short overview of additional input sources which can support the evaluation process and act as a complementary reference point.

7.1 Basic Concept

For evaluating an opportunity, there are additional environmental factors that should be taken into account. Due to the fact that the expected output of the evaluation is not an indication for a decision but more an objective view of the opportunity's potential, further aspects besides the evaluation matrix and its feedback mechanism have to be considered. These aspects are additional input sources reflecting past, present and future situations on the market, acting as complementary reference points that are essential for an objective evaluation process. Three potential sources are identified:

- Similar evaluations: Data from previous evaluations that mach the current opportunity.
- Additional knowledge: Collected information about the environmental situation where the opportunity fits in.
- Internet data: Available information and trends represented by internet activities.

Considering the whole concept of the evaluation, there are altogether four complementary reference points that have an effect on the output: internal and external feedback, similar evaluations, environmental knowledge and internet data (see Figure 7.1).

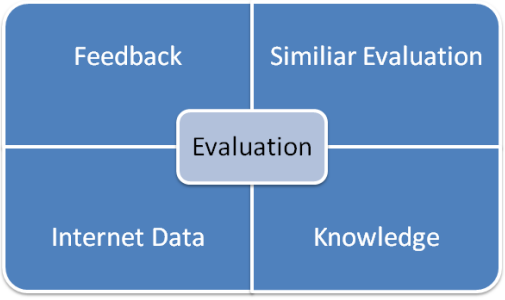

Figure 7.1: Sources for complementary evalution.

7.2 Feedback

As described in chapter *Optimization using Feedback* on Page 40 the feedback mechanism plays an active role to constantly improve the evaluation output by comparing certain results based on the evaluation matrix with external views. This challenges the evaluation in a way so that the process is optimized as well as adjusted to current market situations.

7.3 Similar Evaluations

Every step of the evaluation process will be documented in order to make it comparable. Therefore, any opportunity can be opposed to similar previous projects as far as they fit the general conditions for an adequate comparison. These conditions are, for instance, field of business, project life cycle, market positioning, etc. The goal of these comparisons is to link any interim and final results of the evaluation with other similar projects in order to contextualize them with markets, financials as well as product situations. Generally, this is a comparison between the current situation and the experiences from the past acting as referencing indicators.

7.4 Additional Knowledge

Besides evaluating an opportunity based on a defined mechanism with weighting factors it is also very important to take the environmental aspects of the market into account in order to receive relevant results. Preconditions for such an approach are available knowledge in different market situations that can be collected through news, trends, factbooks, etc. This approach has to be supported by a technological system, because collecting and displaying a huge amount of data is not a simple task and cannot be easily done by hand.

This kind of collecting relevant data can be regarded as an environmental information approach supported by technological concepts like tagging, ontologies, semantic rules, web based crawlers, graph theories, etc. which are mainly responsible for preparing as well as filtering the data in order to get a quick overview of certain trends. Also collecting information can be easily solved by using existing innovations (smart phones, tablets, etc.) which enable to collect the data anywhere anytime.

The goal of an environmental information approach is to receive a quick overview of the market situation where the positioning of the opportunity is targeted. Additionally, it can be regarded as a kind of situational analysis.

7.5 Internet Data

The internet is a fast medium with the ability to reflect current market situations as well as future trends. There are two main information sources that can be used as reference points for the evaluation process - free internet data and user behaviors.

Free internet data gives a good insight into relationships between companies, persons, countries, etc. and can be easily used for statistical and graph views. An example is the online platform Gapminder [gap] that provides data of global world trends. For instance, the following Figure 7.2 depicts some countries based on their health spending in relation to life expectancy:

Another interesting example is Crunchbase, a free information database of technology companies, people, and investors [Cru]. It offers a good overview of the investment situation and how entrepreneurs are connected.

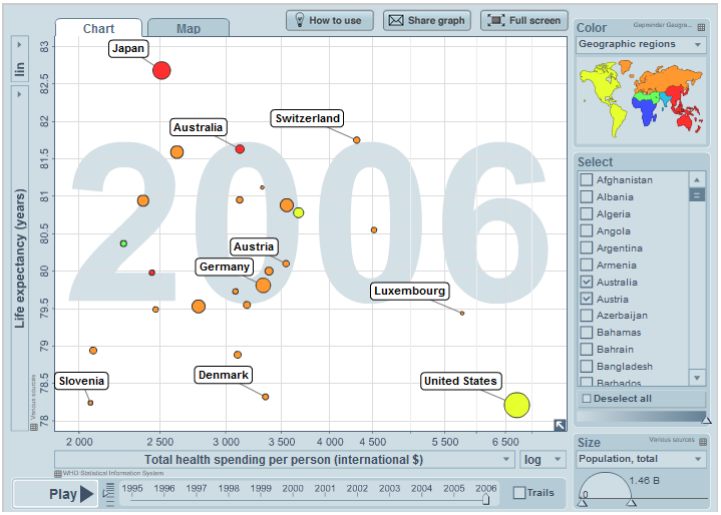

Figure 7.2: Screenshot of Gapminder tool [gap].

Concerning past and future trends, user behaviors in the internet are a strong trend indicator, especially, because they partially represent the market. An interesting website is Google Insights which shows the search terms users have been entering in the Google search engine [goo]. The following example in Figure 7.2 depicts how the terms "twitter" and "iphone" have grown in popularity. This graph is of interest because it illustrates that a success factor of Twitter is also related to the functionality to post short messages on the website of Twitter from smart phones. Before, user could only post message from a computer.

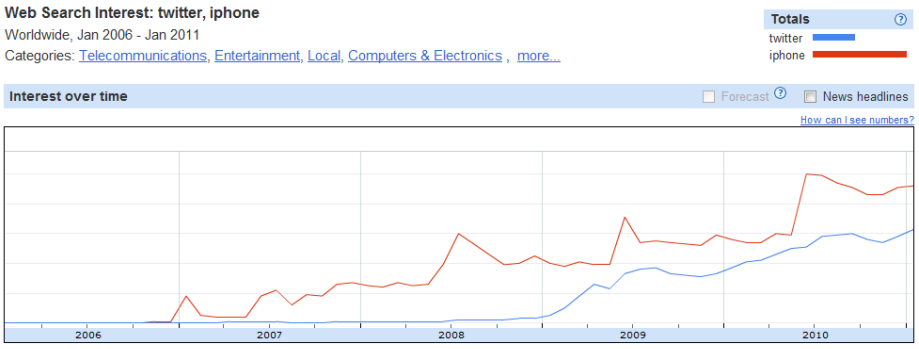

Figure 7.3: Screenshot of Google Insights [goo].

Overall, the internet offers a lot of available data and trends that can support the output of the evaluation process.

Chapter 8

Conclusion

The described concept of using an evaluation matrix offers a rateable and comparable evaluation process with the focus to receive an overview of the potential and market position of the opportunities. The basic idea is to provide an easy way to classify opportunities by using predefined and differently weighted questions and an analysis of these questions for a statistical assessment of the opportunity based on the weighting factors. The output is an indication, which is comparable with other opportunities in the same technological segment and supports the decision process of an investment.

The great advantage of the concept is that it can be easily adapted to any technological segment and that it is constantly optimized by confronting the evaluation results with the market needs by using a feedback system of external sources. Moreover, the concept can also be used during the product life cycle by which the opportunity can be evaluated even after the investment decision in certain periods of time. Therefore, the ongoing development of the opportunity can be measured and is comprehensibly acting as a reference point for other opportunities.

The fields of application of this concept are organizations or structures, which are focusing on opportunity investments with limited resources for evaluation like incubators, business angles and even venture capital firms. They could benefit from this flexible and versatile tool by obtaining a significant evaluation of the opportunity with a minimum of resources.

Appendix A

Survey

A.1 Survey Results

Category	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Company	6.00%	5.00%	5.00%	3.00%	5.00%
Product	10.00%	15.00%	10.00%	15.00%	10.00%
Market	20.00%	15.00%	20.00%	25.00%	20.00%
Patent	1.00%	1.00%	1.00%	1.00%	0.50%
Strategies	3.00%	2.00%	2.00%	2.00%	2.50%
Management	10.00%	12.00%	10.00%	12.00%	10.00%
Feasibility	12.00%	15.00%	12.00%	12.00%	12.00%
Risk	18.00%	15.00%	20.00%	15.00%	15.00%
Financial Attractiveness	20.00%	20.00%	20.00%	15.00%	25.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.1: Survey of experts 1 to 5.

Category	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10
Company	5.00%	5.00%	3.00%	4.00%	5.00%
Product	12.00%	10.00%	10.00%	15.00%	15.00%
Market	25.00%	20.00%	20.00%	20.00%	25.00%
Patent	1.00%	1.00%	1.00%	1.00%	1.00%
Strategies	1.00%	2.00%	1.00%	3.00%	3.00%
Management	10.00%	12.00%	15.00%	12.00%	12.00%
Feasibility	12.00%	15.00%	15.00%	12.00%	12.00%
Risk	14.00%	15.00%	15.00%	15.00%	12.00%
Financial Attractiveness	20.00%	20.00%	20.00%	18.00%	15.00%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

Table A.2: Survey of experts 6 to 10.

A.2 Calculated Weighting

Category	Average	Standard Deviation	Deviation (perc.)
Company	4.60%	0.79%	21.00%
Product	12.20%	2.49%	20.37%
Market	21.00%	3.16%	15.06%
Patent	0.95%	0.16%	16.64%
Strategies	2.15%	0.75%	34.75%
Management	11.50%	1.58%	13.75%
Feasibility	12.90%	1.45%	11.23%
Risk	15.40%	2.17%	15.00%
Financial Attractiveness	19.30%	2.87%	14.87%
Total	100.00%		

Table A.3: Result of survey of ten experts.

Appendix B

Categories & Topics

Company (5.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Company history	10.00%	0.50%	x			x
Organization structure	17.50%	0.88%	x			
Geographical structure	12.50%	0.63%	x			
Partner & investor structure	20.00%	1.00%			x	x
Financial situation	15.00%	0.75%			x	x
Capital requirements	20.00%	1.00%			x	x
Legal status	5.00%	0.25%	x			
TOTAL	100.00%	5.00%	x		x	x

Table B.1: Topics of category *Company*.

Product (12.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Level of innovation	10.00%	1.20%	x	x		
Pricing	10.00%	1.20%		x		
Market acceptance	20.00%	2.40%		x	x	
Customer value	20.00%	2.40%	x	x	x	
Portfolio - composition	10.00%	1.20%		x		
Portfolio - cyclical	10.00%	1.20%		x		
Portfolio - scalable	20.00%	2.40%		x		
TOTAL	100.00%	12.00%	x	x	x	

Table B.2: Topics of category *Product*.

Market (20.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Potential - present & future	23.00%	4.60%	x	x		
Market volume	22.00%	4.40%		x	x	
Target groups	15.00%	3.00%		x	x	
Competition	20.00%	4.00%	x	x	x	
Targeted market	5.00%	1.00%	x	x	x	
Time to market	15.00%	3.00%	x	x		
TOTAL	100.00%	20.00%	x	x	x	

Table B.3: Topics of category *Market*.

Patent (1.0%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Existing / not existing	50.00%	0.50%	x		x	
Avoidance patent	10.00%	0.10%	x		x	
Patent strategy	15.00%	0.15%	x		x	
Geographical areas	15.00%	0.15%	x		x	
Period of validity	10.00%	0.10%	x		x	
TOTAL	100.00%	1.00%	x		x	

Table B.4: Topics of category *Patent*.

Strategies (2.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Business strategy	50.00%	1.00%	x		x	
Distribution strategy	50.00%	1.00%	x		x	
TOTAL	100.00%	2.00%	x		x	

Table B.5: Topics of category *Strategies*.

Management (12.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Relevance for success	50.00%	6.00%			x	x
Spirit of entrepreneurs	20.00%	2.40%	x			x
Professional qualification	30.00%	3.60%	x		x	x
TOTAL	100.00%	12.00%	x		x	x

Table B.6: Topics of category *Management*.

Feasibility (13.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Technological	40.00%	5.20%	x	x		
Business model	40.00%	5.20%		x	x	x
Human resources	20.00%	2.60%				x
TOTAL	100.00%	13.00%	x	x	x	x

Table B.7: Topics of category *Feasibility*.

Risk (15.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Technological	40.00%	6.00%		x	x	
Economic	60.00%	9.00%		x		x
TOTAL	100.00%	15.00%		x	x	x

Table B.8: Topics of category *Risk*.

Financial Attractiveness (20.00%)	Relative	Absolute	Level 1	Level 2	Level 3	Level 4
Exit Options	30.00%	6.00%			x	x
Return on investment	50.00%	10.00%			x	x
Investment structure	20.00%	4.00%			x	
TOTAL	100.00%	20.00%			x	x

Table B.9: Topics of category *Financial Attractiveness*.

Appendix C

Topic Related Questions

Questions for Category Company

Question	5	4	2	1
Company history: *How does history as well as management experience fit the located market?*	Very well	Enough experience but needs support	Not enough experience but developable	Not enough history and management experience
Organization structure: *How is the company organized?*	Flat hierarchical structure with 1-2 decision makers	Deep hierarchical structure with 1-2 decision makers	Distributed structure with well defined decision makers	Deep hierarchical structure with a lot of decision makers
Geographical structure: *How is the geographical structure of the company?*	Centralized structure with geographically distributed subsidaries	Distributed structure with well coordinated organizations	Structure which needs some reorganization effort	Distributed structure with high effort to coordinate
Partner & investor structure: *Are there any investors in the company?*	No investors	A few investors with small investments	Small investors with high investments	A lot of investors (situation unclear)
Financial situation: *How is the current financial situation of the company?*	Well financied, low risk, no debts and turnovers	No turnovers	Near cashout - company does not have enough equity	Company insolvency
Equity requirements: *How high is the capital requirement?*	Low or according to market conditions - with strong market potential	High with strong market potential	Low with smaller (targeted) market potential but expandable	Too high for the targeted market
Legal status: *Do the owners have have the rights on the product / copmpany?*	They have all the rights and the rights are clarified	They have the rights which are necessary for an active market cultivation	Rights are only partly available and still have to be clarified	No rights are clarified at the moment

Table C.1: Evaluation questions of category *Company.*

Questions for Category Product

Question	5	4	2	1
Level of innovation: *What is the level of innovation?*	High and the product is developed by the company	High and the product is extended by the company (potential of a complementary asset)	Good and the product is developed out of existing technologies on the market	Low and the product is already facing existing innovations on the market
Pricing: *Relation between price and service offer?*	Better product than competition (with low price)	Better product than competition (with equal price)	Better product than competition (but higher price)	Same product as competition (with lower price)
Market acceptance: *What is the expected market acceptance?*	Very high expected acceptance	By having some modifications on the product, good acceptance is expected	Changing some company structure could lead to a good acceptance	At the moment low acceptance is expected
Customer value: *Does it have a clear benefit for the customer?*	High expected benefit	Benefit exists but has to be worked out more precisely	Benefit is not really definded	At the moment low customer benefit expected
Portfolio - composition: *How well are products differentiated?*	Clear, well differentiated and focused	A lot of products, but well differentiated	A lot of products, but not well differentiated	At the moment too many products in the portfolio of the company
Portfolio - cyclical: *How cyclically dependent is the product?*	Not very much	Less cyclically dependent	Needs some portfolio changes to be not or less cyclical	Strong cyclically dependent
Portfolio - scalable: *How easily is the product scalable?*	Easily scalable without any deepen modifications	Some small efforts are needed to be scalable	A lot of efforts are needed to be scalable	Not scalable at the moment

Table C.2: Evaluation questions of category *Product*.

Questions for Category Market

Question	5	4	2	1
Potential - present & future: *What is the expected present & future potential?*	Both are very high	High future and expandable present potential	High present potential	Low potential but expandable
Market volume: *How does the market develop?*	High growth	Good growth	Moderate growth	Smaller growth and stagnation
Target groups: *What is the expected potential of the target groups?*	High potential of clear defined target groups	High potential, but targeted groups not well segmented	Good potential with a better selection of the target group	Targeted group does not have a high potential
Competition: *What kind of competition is expected?*	No direct nor indirect	No direct but indirect	Direct but weak competition	Direct and strong
Targeted market: *What is the aimed market?*	Global market	Continental market	National market	Regional or local market
Time to market: *What is the expected time for a market entry?*	Less than a year	Between 1 and 2 years	Between 3 and 5 years	More than 5 years

Table C.3: Evaluation questions of category *Market*.

Questions for Category Patent

Question	5	4	2	1
Existing / not existing: *Do patents for the products exist?*	Yes	Not granted so far	Not for the core product	No
Avoidance patent: *Does an avoidance patent exist?*	Yes	Not granted so far	Not for the core product	No
Patent strategy: *Is a patent strategy defined?*	Yes	A basic strategy is available	Yes, but not adequate	No
Geographical areas: *Where do patents exist?*	For international and global markets	For local and neighboring markets	In the country where the company is operating	Nowhere
Period of validity: *What is the validation of the core patent?*	More than 10 years	Less than 10 years	Less than 5 years	Expired or not existing

Table C.4: Evaluation questions of category *Patent*.

Questions for Category Strategies

Question	5	4	2	1
Business strategy: *Does a business strategy exist?*	Yes and executable	Yes, but has to be optimized	Yes, but not realistic	There is no adequate strategy available
Distribution strategy: *Does a distribution strategy exist?*	Yes and executable	Yes, but has to be optimized	Yes, but not realistic	There is no adequate strategy available

Table C.5: Evaluation questions of category *Strategies*.

Questions for Category Management

Question	5	4	2	1
Relevance for success: *How much does the success of the company depend on entrepreneurs or management?*	Success is generally independent	Depends on one or all of the entrepreneurs	Depends on the general management	Depends on the management structure
Spirit of entrepreneurs: *How experienced is the entrepreneur?*	Has a lot of experience and a strong personality	Less experienced but strong personality	High potential of management skills, but need to be developed	Lower potential of management skills and less experienced
Professional qualification: *How well is the entrepreneur qualified to lead the company?*	Highly qualified	Well qualified	Needs support	Not well qualified

Table C.6: Evaluation questions of category *Management*.

Questions for Category Feasibility

Question	5	4	2	1
Technological: *How much effort does the product need for a market entry?*	Small effort with a short implementation period	High effort with a short implementation period	Small effort with a long implementation period	High effort with a long implementation period
Business model: *Does an adequate business modell exist?*	Yes	Yes, but it has to be improved	Yes, but it has to be changed	No
Human resources: *Are there any human resources needed for a market entry?*	All resources available	Necessary resources are available but have to be increased later on	Some resources are available but more resources are required to improve the product	Some or no ressources available - additional support is needed

Table C.7: Evaluation questions of category *Feasibility*.

Questions for Category Risk

Question	5	4	2	1
Technological risk: *How high is the technological risk?*	Small risk	A risk which is manageable	Risk which can be prevented with use of resources	High risk
Economic risk: *How high is the economic risk?*	Small risk	A risk which is manageable	Risk which can be prevented with use of resources	High risk

Table C.8: Evaluation questions for category *Risk*.

Questions for Category Financial Attractiveness

Question	5	4	2	1
Exit Options: *What kind of exit options are possible?*	Trade sale	IPO	Total return	Earn out
Return on Investment *When is the return on investment expected?*	Less than 2-3 years	Less than 4 years	Less than 6 years	At the moment a predictable forecast is difficult
Investment structure: *What kind of investment structure is needed?*	Risk share	Co-investment over 33%	Co-investment less than 33%	Minority shareholding

Table C.9: Evaluation questions for category *Financial Attractiveness*.

Appendix D

Internal Evaluation Example

D.1 Results of Internal Evaluation

Category: Company	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Company history	5	5	0.50%	0.50%	100.00%
Organization structure	4	5	0.88%	0.70%	80.00%
Geographical structure	5	5	0.63%	0.63%	100.00%
Partner & investor structure	5	5	1.00%	1.00%	100.00%
Financial situation	5	5	0.75%	0.75%	100.00%
Capital requirements	5	5	1.00%	1.00%	100.00%
Legal status	5	5	0.25%	0.25%	100.00%
TOTAL	34	35	5.00%	4.83%	96.50%

Table D.1: Internal evaluation example of category *Company*.

Category: Product	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Level of innovation	4	5	1.20%	0.96%	80.00%
Pricing	4	5	1.20%	0.96%	80.00%
Market acceptance	4	5	2.40%	1.92%	80.00%
Customer value	4	5	2.40%	1.92%	80.00%
Portfolio - composition	4	5	1.20%	0.96%	80.00%
Portfolio - cyclical	4	5	1.20%	0.96%	80.00%
Portfolio - scalable	4	5	2.40%	1.92%	80.00%
TOTAL	28	35	12.00%	9.60%	80.00%

Table D.2: Internal evaluation example of category *Product*.

Category: Market	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Potential - present & future	4	5	4.60%	3.68%	80.00%
Market volume	4	5	4.40%	3.52%	80.00%
Target groups	5	5	3.00%	3.00%	100.00%
Competition	1	5	4.00%	0.80%	20.00%
Targeted market	2	5	1.00%	0.40%	40.00%
Time to market	4	5	3.00%	2.40%	80.00%
TOTAL	20	30	20.00%	13.80%	69.00%

Table D.3: Internal evaluation example of category *Market*.

Category: Patent	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Existing / not existing	5	5	0.50%	0.50%	100.00%
Avoidance patent	4	5	0.10%	0.08%	80.00%
Patent strategy	2	5	0.15%	0.06%	40.00%
Geographical areas	1	5	0.15%	0.03%	20.00%
Period of validity	4	5	0.10%	0.08%	80.00%
TOTAL	16	25	1.00%	0.75%	75.00%

Table D.4: Internal evaluation example of category *Patent*.

Category: Strategies	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Bussiness strategy	4	5	1.00%	0.80%	80.00%
Distribution strategy	5	5	1.00%	1.00%	100.00%
TOTAL	9	10	2.00%	1.80%	90.00%

Table D.5: Internal evaluation example of category *Strategies*.

Category: Management	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Relevance for success	4	5	6.00%	4.80%	80.00%
Spirit of entrepreneurs	5	5	2.40%	2.40%	100.00%
Professional qualification	5	5	3.60%	3.60%	100.00%
TOTAL	14	10	12.00%	10.80%	90.00%

Table D.6: Internal evaluation example of category *Management*.

Category: Feasibility	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Technological	2	5	5.20%	2.08%	40.00%
Business model	1	5	5.20%	1.04%	20.00%
Human resources	1	5	2.60%	0.52%	20.00%
TOTAL	4	15	13.00%	3.64%	28.00%

Table D.7: Internal evaluation example of category *Feasibility*.

Category: Risk	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Technological	4	5	6.00%	4.80%	80.00%
Economic	5	5	9.00%	9.00%	100.00%
TOTAL	9	10	15.00%	13.80%	92.00%

Table D.8: Internal evaluation example of category *Risk*.

Category: Financial Attractiveness	Score (selected)	Score (maximum)	Weighting	Percentage (absolute)	Percentage (relative)
Exit Options	5	5	6.00%	6.00%	100.00%
Return on investment	2	5	10.00%	4.00%	40.00%
Investment structure	2	5	4.00%	1.60%	40.00%
TOTAL	9	15	20.00%	11.60%	58.00%

Table D.9: Internal evaluation example of category *Financial Attractiveness*.

Appendix E

Comparison of Data

E.1 Evaluation by Five Experts

Given score for category *Company* by five experts:

Product	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Level of innovation	4	4	2	4	5
Pricing	5	1	2	4	5
Market acceptance	4	4	4	4	4
Customer benefit	2	2	2	2	4
Portfolio - composition	4	1	4	1	2
Portfolio - cyclical	4	4	4	4	4
Portfolio - scalable	1	1	2	1	2
Total	24	17	20	20	26

Table E.1: Score of category *Product* by five experts.

Given score for category *Market* by five experts:

Market	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Potential - present & future	4	4	4	5	4
Market volume	2	2	2	5	4
Target groups	5	4	2	4	4
Competition	1	1	1	2	2
Targeted market	2	2	2	2	2
Time to market	4	2	4	4	2
Total	18	15	15	22	18

Table E.2: Score of category *Market* by five experts.

Given score for category *Risk* by five experts:

Risk	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Technological	5	5	4	4	4
Economic	5	5	5	5	5
Total	10	10	9	9	9

Table E.3: Score of category *Risk* by five experts.

Absolute percent for category *Product* calculated from the experts' score:

Product	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Level of innovation	0.96%	0.96%	0.48%	0.96%	1.20%
Pricing	1.20%	0.24%	0.48%	0.96%	1.20%
Market acceptance	1.92%	1.92%	1.92%	1.92%	1.92%
Customer benefit	0.96%	0.96%	0.96%	1.96%	1.92%
Portfolio - composition	0.96%	0.24%	0.96%	0.24%	0.48%
Portfolio - cyclical	0.96%	0.96%	0.96%	0.96%	0.96%
Portfolio - scalable	0.48%	0.48%	0.96%	0.48%	0.96%
Total	7.44%	5.76%	6.72%	6.48%	8.64%

Table E.4: Absolute percent of category *Product* by five experts.

Absolute percent for category *Market* calculated from the experts' score:

Market	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Potential - present & future	3.68%	3.68%	3.68%	4.60%	3.68%
Market volume	1.76%	1.76%	1.76%	4.40%	3.52%
Target groups	3.00%	2.40%	1.20%	2.40%	2.40%
Competition	0.80%	0.80%	0.80%	1.60%	1.60%
Targeted market	0.40%	0.40%	0.40%	0.40%	0.40%
Time to market	2.40%	1.20%	2.40%	2.40%	1.20%
Total	12.04%	10.24%	10.24%	15.80%	12.80%

Table E.5: Absolute percent of category *Market* by five experts.

Absolute percent for category *Risk* calculated from the experts' score:

Risk	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Technological	6.00%	6.00%	4.80%	4.80%	4.80%
Economic	9.00%	9.00%	9.00%	9.00%	9.00%
Total	15.00%	15.00%	13.80%	13.80%	13.80%

Table E.6: Absolute percent of category *Risk* by five experts.

E.2 Internal and External Comparisons

Product	Internal a.p.r.	Experts a.p.r.	Difference in percent
Level of innovation	0.96%	0.91%	-5.00%
Pricing	0.96%	0.82%	-15.00%
Market acceptance	1.92%	1.92%	0.00%
Customer benefit	1.92%	1.15%	-40.00%
Portfolio - composition	0.96%	0.58%	-40.00%
Portfolio - cyclical	0.96%	0.96%	0.00%
Portfolio - scalable	1.92%	0.67%	-65.00%
Total	9.60%	7.01%	-27.00%

Table E.7: Internal vs. external views of category *Product*.

Market	Internal a.p.r.	Experts a.p.r.	Difference in percent
Potential - present & future	3.68%	3.86%	5.00%
Market volume	3.52%	2.64%	-25.00%
Target groups	3.00%	2.28%	-24.00%
Competition	0.80%	1.12%	40.00%
Targeted market	0.40%	0.40%	0.00%
Time to market	2.40%	1.92%	-20.00%
Total	13.80%	12.22%	-11.42%

Table E.8: Internal vs. external views of category *Market*.

Risk	Internal a.p.r.	Experts a.p.r.	Difference in percent
Technological	4.80%	5.28%	10.00%
Economical	9.00%	9.00%	0.00%
Total	13.80%	14.28%	3.48%

Table E.9: Internal vs. external views of category *Risk*.

Appendix F

Venture Backed Investments

The following statistical data is provided by PricewaterhouseCoopers/National Venture Capital Association, MoneyTree^{TM} Report.

Data: Thomson Reuters

Date: February 2011

Link: http://www.pcwmoneytree.com

F.1 Investments of USD (1995-2010)

First sequence investments by stages of business development from 1995 to 2010 in USD.

Year	Seed	Early Stage	Expansion	Later Stage
1995	649.107.000,00	855.478.200,00	1.687.596.800,00	543.603.000,00
1996	648.047.300,00	1.277.343.800,00	1.712.496.400,00	388.545.100,00
1997	746.526.400,00	1.678.272.500,00	1.871.099.900,00	323.693.900,00
1998	934.131.800,00	2.490.338.700,00	2.608.860.500,00	574.098.200,00
1999	2.593.381.800,00	5.933.120.600,00	6.152.060.700,00	483.683.000,00
2000	2.289.587.800,00	15.099.266.600,00	8.510.936.100,00	476.980.100,00
2001	555.827.300,00	4.286.183.200,00	4.286.183.200,00	1.847.445.800,00
2002	241.604.500,00	2.247.737.400,00	2.247.737.400,00	1.306.251.300,00
2003	270.407.600,00	2.110.542.900,00	974.027.700,00	974.027.700,00
2004	358.804.900,00	2.437.638.200,00	1.335.003.800,00	549.637.500,00
2005	796.852.200,00	2.425.873.000,00	1.457.189.300,00	896.670.000,00
2006	1.050.442.700,00	2.273.818.200,00	1.982.585.200,00	735.383.400,00
2007	1.105.718.100,00	2.902.956.500,00	2.455.772.000,00	865.551.100,00
2008	1.279.986.500,00	2.277.753.900,00	1.688.963.400,00	949.803.900,00
2009	869.752.400,00	1.263.454.800,00	743.199.200,00	451.084.000,00
2010	866.489.800,00	1.631.354.600,00	1.093.200.900,00	692.048.000,00
Total	5.969.241.700,00	12.775.211.000,00	9.420.910.000,00	4.590.540.400,00

Table F.1: Investments in USD, USA, 1995 - 2010.

F.2 Amount of Investment Deals (1995-2000)

Year	Seed	Early Stage	Expansion	Later Stage
1995	252	285	296	58
1996	314	409	365	58
1997	346	476	430	50
1998	461	497	417	51
1999	656	1,118	640	40
2000	580	1,935	823	56
2001	219	697	285	30
2002	128	472	203	34
2003	161	427	146	33
2004	169	524	188	50
2005	206	529	245	60
2006	317	549	274	95
2007	400	561	284	92
2008	363	520	224	138
2009	203	366	136	69
2010	241	506	169	83
Total	5,016	9,871	5,125	1,022

Table F.2: Amount of investment deals, USA, 1995 - 2010.

F.3 IPOs and Aquisition Deals, USA (1990 - 2009)

Year	IPO	Aquisition
1990	70	20
1991	153	17
1992	195	75
1993	219	71
1994	166	100
1995	205	97
1996	272	118
1997	138	163
1998	78	212
1999	269	240
2000	265	316
2001	41	355
2002	22	320
2003	29	285
2004	94	349
2005	57	349
2006	57	376
2007	86	379
2008	6	349
2009	12	270

Table F.3: Venture backed deals: IPOs and aquisition, USA, 1990 - 2009.

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