Konstanzer Managementschriften

Philip Junge

Strategic Opportunity Management

Sascha Götte (Hrsg.)

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Hochschule Konstanz Technik, Wirtschaft und Gestaltung
University of Applied Sciences
Brauneggerstraße 55
D-78462 Konstanz
Telefon: +49-7531-206-0
www.htwg-konstanz.de

Gesamtherstellung: Junge Medien, 78647 Trossingen, www.jungemedien-online.de

Preface by Patrick Rosenstock

Today, many of the evadable certainties for managing product strategies and designing product portfolios are irreversibly eroding. Facing this challenge requires highly dynamic management strategies. In the last years new strategies that cope with the uncertainty of markets were intruduced. However, most of them concentrating mainly on uncertain events that could have a negative impact on planned szenarios. This situation creates a dilemma: mitigating potential risks in planning szenarios ties a large amount of finacial resources to projects. In contrast to this situation, there is no balancing of these mitigations by potential positive planning deviations. Therefore, the real amount of resources that needs to be allocated to a certain project is impossible to define. This situation creates a large necessity for ecomomic sience to deal with the subject of "Opportunity Management" as a counterpart to all "Risk Management" systems. It supports strategic decisions, it can increase productivity and it can improve the financial transparency of companies. Apart from the financial side, a systematic tracking and mangement of opportunities can create new chances in other areas or projects.

At EADS we are currently looking for ways to implement this topic in practice. As Opportunity Management is a relatively new discipline in economic science. As a consequence, there is a lack of theoretical guidance when it comes to the practical implementation of the topic.

With this work, Philip Junge described an a strategic approach that is essential for all companies that need to cope with the present complexity of the economic environment. I especially enjoyed to see that he formulated a clear distinction of risk and opportunity, which I personally support the fullest.

Practice will show how the ideas that are proposed in this book will work in practice. However, I am sure that this work opened a door to a new and very promising approach to deal with opportunities in modern companies.

Patrick Rosenstock
Chief Risk Officer, EADS MAS

Publishers Preface

The introduction of the undergraduate and graduate programs of „Business Administration and Engineering“ (Wirtschaftsingenieurwesen) has strongly encouraged research activities in the area of management at the University of Applied Sciences in Konstanz (Hochschule Konstanz Technik, Wirtschaft und Gestaltung). The research paper series „Konstanzer Managementschriften“ has the aim to honour the authors of excellent papers and to make the results accessible to a wider community of interested managers and researchers both in printed and electronic form.

The author of this paper, Philip Junge (M.Eng.), has developed a new strategic method to manage companies in today's constantly changing environment. Whereas the strategic method of risk management is widely used in modern companies the positive part of the insecurity is very often not followed up systematically. The author proposes a strategic opportunity management process closely linked but detached from the existing risk management process in order to identify and manage opportunities. The paper also includes clear guidelines about the implementation of opportunity management in companies.

I hope that this paper will be a valid support for managers being confronted with a strongly increasing level of complexity and insecurity and a starting point for further research activities in this field.

Prof. Dr. Sascha Götte
HTWG Konstanz

Authors Preface

Today we live in a world that is characterized by a constantly changing environment. During the last decade, this highly volatile environment forced companies to implement strategies that identify, track and minimise the risks that entrepreneurial activity entails. Unfortunately, risks only account for a part of the insecurity that is connected to future events. The other and not inferior part of this insecurity consists of possible positive developments - so called opportunities. Due to this reason in economic science and in practice the opinion aggravates that solely focusing on risks is not sufficient to fully exploit the potential of markets and companies.

In the 16th century, the Dutch Renaissance humanist scholar Desiderius Erasmus (1466-1536) said:

“It is well known that among the blind, the one-eyed man is king.”

Transferring this statement in the context of Risk Management, the conclusion becomes apparent: The environmental uncertainty that surrounds entrepreneurial actions includes both opportunities and threats. As commonly practiced though, Risk Management tools only address threats. While this approach is surely better than doing nothing, it still can be seen as a major weakness of the traditional Risk Management approach. Nevertheless, in terms of Erasmus, this approach represents the one-eyed man when compared with the blind. To continue this metaphor a little further, it is possible to conclude that the one-eyed king could be easily relieved of his crown by introducing an emperor who is able to see with two eyes. Although this problem is well known in economic science, up to know only little scientific focus was shifted towards the systematic identification and management of opportunities. In fact, most of the present literature focuses on the identification and handling of risk and even though much of the recently published literature captures the term opportunity, none of it proposes a solid idea of following up on the approach. Still, facing the defiances of the present economic environment, it is not sufficient for copanies to focus their attention on reducing risks. Instead, it is imperative to deal with the subject of Opportunity Management as well.

With this paper, I want to undermine the importance of Opportunity Management for all companies independently of their size or branch that they operate in. Thereby, this paper is dedicated to all managers who strive to improve the professionalism of their companies in terms of strategic thinking. Furthermore, I hope that this paper can facilitate a practical implementation of a working Opprotunity Management System.

Munich, January 10th, 2009 Philip Junge

"The opportunity knocks more often than one thinks, but most of the times there's nobody at home"

William P. Rogers, american humorist, 1879-1935

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List of Abbreviations

BSC ..... Balanced Scorecard
C&O ..... Chance & Opportunity
CIP ..... Continuous Improvement Process
COM ..... Chance & Opportunity Manager
EA ..... Enhancement Action
GDP ..... Gross Domestic Product
OBS ..... Opportunity Breakdown Structure
OM ..... Opportunity Management
OMS ..... Opportunity Management System
OP ..... Operative Plan(ning)
P-I ..... Probability-Impact
RBS ..... Risk Breakdown Structure
RM ..... Risk Management
STEP ..... Sociological, Technological, Economical and Political
SWOT ..... Strengths, Weaknesses, Opportunities, Threats
WBS ..... Work Breakdown Structure

Part I - Introduction

"As we know, there are known knowns. There are things we know we know. We also know there are known unknowns. That is to say we know there are some things we do not know. But there are also unknown unknowns, the ones we don't know we don't know."

(Donald Rumsfeld, American Secretary of Defense, 2001-2006)

What Donald Rumsfeld described in his quote is, that the largest part of our future is connected to a certain degree of uncertainty. This paper will deal with uncertain events that lead to a fortunate outcome. Despite of the fact that the relationship of future events and uncertainty existed for all times, the way that men handled uncertainty changed radically over the time. Therefore, this chapter will first provide an overview of the history of "uncertainty-management". As in the past, uncertainty was almost exclusively connected to negative events, the history of uncertainty management can be equated with the history of Risk Management. After this, the actual state of affairs of the management of uncertainty will be described. Thereon, the problem that this paper addresses will be outlined and the targets will be defined. Finally, the procedural method that this paper follows, will be introduced.

1. History of Risk Management

Around the end of the 19th century, one believed that it was not possible to look at beliefs form a rational point of view. One could believe whatever one wanted.[1] One could even believe in the impossible – just like the White Queen in Alice Through The Looking Glass. When Alice said that one could not believe in impossible things, the queen answered:

"I daresay you haven't much practice. When I was in your age, I always did for half-an-hour a day. Sometimes I've believed as many as six impossible things before breakfast."[2]

The ability to believe in six impossible things before breakfast is an ability that is required in most jobs today. One needs to believe in deadlines, characteristics, or budgets, which can afterwards be regarded as impossible. As this chapter will show, in the course of history men discovered ways to quantify the degree of impossibility. Therefore, it is no longer necessary to believe in impossible things – rather, there is now the option of telling how

1 See: DeMarco, T./Lister T., Bärentango, 2003, p. XV.
2 Carrol, L. Alice, 2001, p. 89.

impossible or how possible the occurrence of certain events is.

Within living memory, there was always gambling. Until the 12th century, the outcome gambling was accepted to be fateful. At this time one could not speak of a risk-comprehension of any kind. The roots of the present risk-comprehension lie in the Hindu Arabic numbering system, which arrived in the western world about 800 years ago. In 1202 Leonardo Pisano (today also known as Fibonacci) published his book Liber Abaci. He detected, that the Hindu Arabic numbering system enabled extensive calculations. These calculations had not been possible with the roman numbering system which was common in Europe at that time. The book laid the foundations of calculations with whole numbers, fractions and the extraction of square roots.[3]

The real research on risk started in the Renaissance, when antiquated and religious questions were openly doubted. In the year 1494 Luca Paccioli published his work Summa de arithmetic, geometria et proportionalita. In addition to multiplication tables, the book contained explicit descriptions of double-entry accounting. It also dealt with the question of how to allocate the pool when a gamble is aborted. This question is known as "the question of points" and led to the barrier of the quantification of risk.

In 1654, Pascal and Fermat solved the question of points. Hence, they are considered as the discoverers of the probability theory. Only eight years later, the work Natural and Political Observations made upon the Bills of Mortality, which was written by John Graunt, was published. This work was the breakthrough in statistical sampling and probability calculation, which are the foundation of modern risk controlling mechanisms.

In 1733, De Moivre published his Doctrine of Chances in which he introduces what is today known as the normal curve of distribution. He also calculated a statistical measure deviation around the mean, which is today known as the standard deviation.

In 1738, Jacob Bernoulli presented a completely new approach to probability calculation which is known as the utility theory. This theory remained the prevailing paradigm of rational action until the end of the 20th century and was the foundation of the present principals of the capital investment.

In 1885, Francis Galton developed the theorem of the regression to the mean value, which is today known as correlation.[4]

Finally, the 20th century shaped the terms of Risk Management as we know them today. In

3 See: Bernstein, P., Götter, 1997, p.9
4 See: Bernstein, P., Götter, 1997, p.10-103.

1921, Frank Knight published his work Risk, Uncertainty and Profit in which he explained his research on the difference between uncertainty and risk. He concludes that the probabilities of repeating identical events do not enable a projection of these events to the future.

In 1926, John v. Neumann introduced the game theory. He advanced the view that the reason for uncertainty lies in the behaviour of the others.

In 1952, Harry Markowitz published his article Portfolio Selection in the Journal of Finance. This article is today regarded as the origin of the portfolio theory and introduced diversification as the best means against a variance in earnings.

Another remarkable development was made in 1979 by Kanemann and Tversky. Their research concerned human behaviour in profit or loss situations and is today known as the Prospect Theory.

In 1994, the investment bank Morgan and Stanley finally introduced the Value at Risk concept, which is today a standard measure in the financial sector.[5]

5 See: Bernstein, P., Götter, 1997, p.104-179.

2. Problem Definition

Today we live in a world which is characterized by a constantly changing environment. The world continues to grow together and one term plays a more and more important role in each aspect of human life: "Globalization".

"Now, more than ever before we are all connected to each other and to things near and far in the world around us. Where it once took weeks or months to travel across a single country, we can now travel around the globe in only hours or days. Where it once took weeks or months to receive news about important events, we now see them as they are occurring through live satellite broadcasts. Where it once took weeks to correspond with others in distant places, they are now only moments away by phone or the internet."[6]

Today, the information and telecommunication technology connects people and information all over the world in real time. Distances seem to blur and the marketplaces of businesses now seem to be open for competitors from all over the world. Moreover, economical and political developments like the "single European market" or the formation of further regional economic zones in almost all continents, the opening of the eastern European economic zone and the deregulation of former state owned branches, have amplified this effect. For the very first time in history, we indeed live in a truly global world, where unrestrained world-spanning political, economical and sociological inter-exchange between the nations takes place.[7] During the last decade, this highly volatile environment forced companies to implement strategies which identify, track and minimise the risks that entrepreneurial activity entails.

However, today it becomes apparent that solely focusing on the avoidance of negative planning deviations is not sufficient to fully exploit the potential of markets and companies. Although this problem is well known in economic science, up to know only little scientific focus was shifted towards the systematic identification and management of chances. In fact, most of the present literature focuses on the identification and handling of risk and even though much of the recently published literature captures the term chance, none of it proposes a solid idea of following up on the approach.

Still, facing the defiances of the present economic environment, it is not sufficient for companies to focus their attention on reducing risks. Instead, it is imperative to deal with the subject of Opportunity Management as well.[8] Figure 1 graphically displays the purpose of Opportunity Management in today's business environment.

6 Kotler, P./Armstrong, G., Marketing, 2005, p. 239.
7 See: Junge, P., Emerging Markets, 2006, p. 1-2.
8 See: Lück, W., Chancenmanagement, 2002 (article without page numbering)

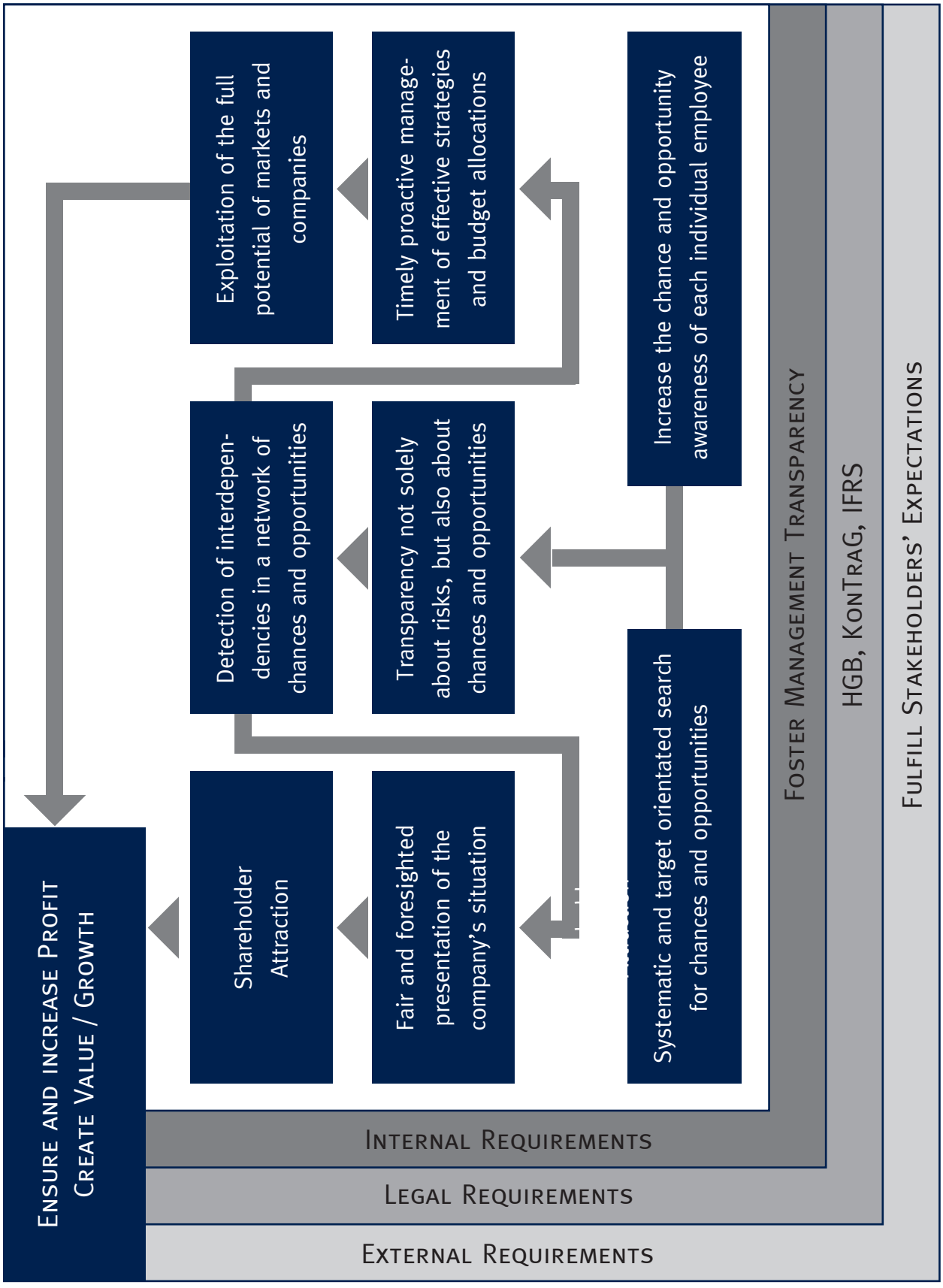


Figure 1: Problem Definition - Purpose of Opportunity Management: own illustration

A Survey that was conducted in the course of this paper underlines the importance of scientific work in this sector: The results show that a large majority of present Risk Management practitioners has heard of Opportunity Management before. However, today only 10% of the questioned companies actively manage opportunities. Nevertheless, 86% of the survey participants would consider an Opportunity Management system as value added to their company. This situation creates a strong need for action in this area of scientific research.[9]

3. Target Setting

The fundamental goals of this paper are to convey the importance of Opportunity Management as a new and increasingly important management approach to all readers. Furthermore, this paper determines a practically applicable terminology for all terms which describe deviations from objectives (risk, planning deviation, chance, opportunity and lucky strike). The main aim of this paper is then to establish a common, homogeneous and integral framework for Opportunity Management. Additionally, this paper shall provide support for setting up a professional Opportunity Management in practice. In this context, the aim of this paper is to be applicable as a guideline for Opportunity Management practitioners.

4. Procedural Method

In order to reach the target setting, this paper is structured in three basic parts. The first introduces the reader to the topic. This introduction generates a general understanding of risk, chance and opportunity as well as of the importance of managing uncertainty. The second part of this paper outlines an Opportunity Management process that builds on the present state of economic research. The last part of this paper concludes the analysis. Figure 2 visualizes the structure of this paper.

5. Terminology

Every attempt to describe possible future developments reveals that all these events are subject to certain attributes: insecurity, probability, impact, predictability, lead time, etc.

9 See: Appendix 1 - Survey exploring the spread of OM in practice.

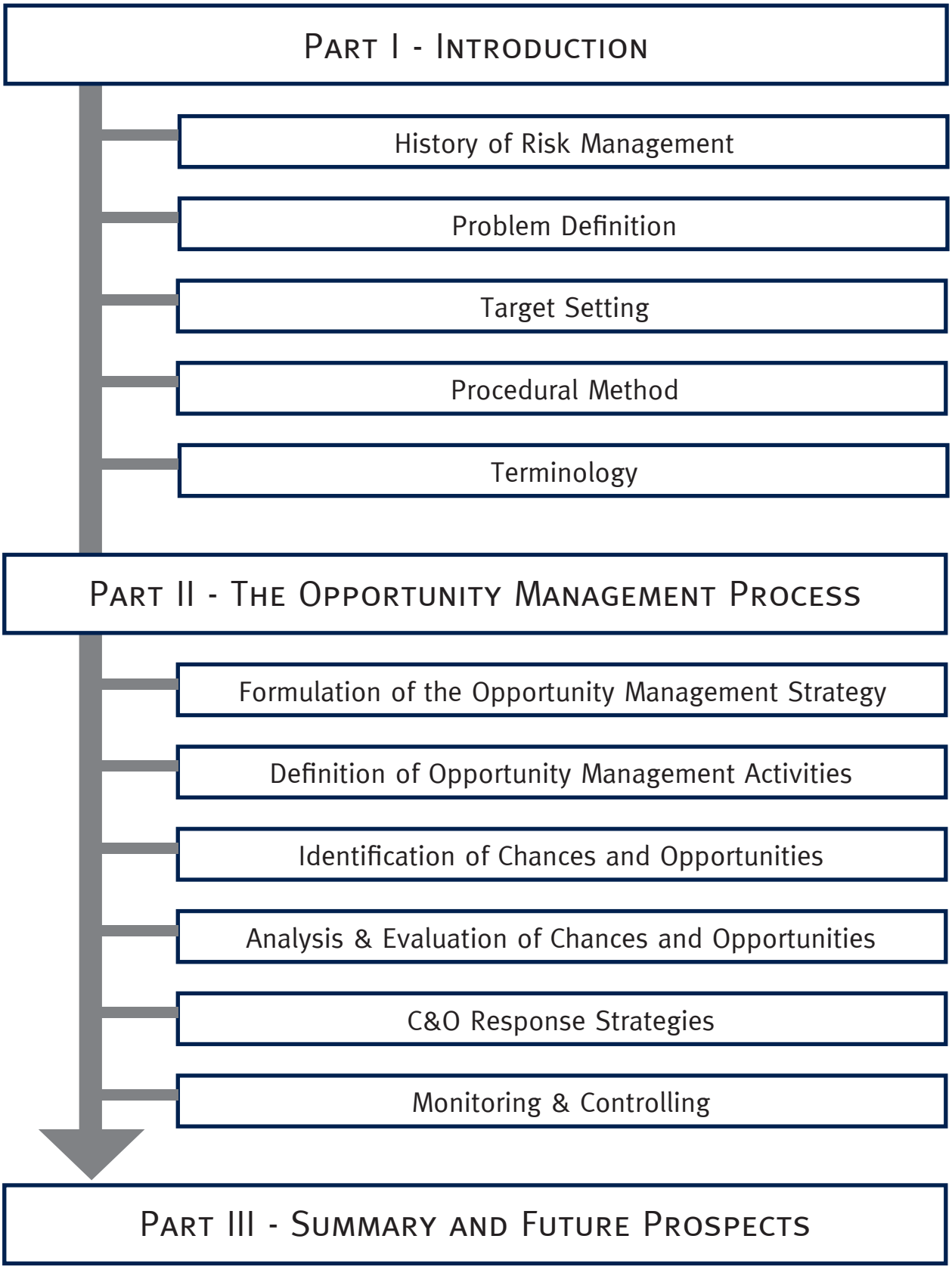


Figure 2: Structure of this Paper, source: own illustration

However, in order to get a clear understanding, it is important to generate a common wording. Therefore, it is necessary to define the terms and dimensions that describe all aspects of possible future events. In this context, this chapter will define the terms chance, lucky strike, opportunity and planning uncertainty. Although Risk and Opportunity Management are two very closely related disciplines this paper will only propose a brief working definition for risk in order to facilitate the access of the reader into the topic. In the following, the subtleties of negative deviations from objectives will therefore not be discussed any further.

5.1. Risk

The term of risk originates from the Italian word "risicare" which means "venture".[10] As one can see, in contrast to the colloquial usage, the word does originally not have a negative connotation. Publications in economic science equally apply negative as well as a neutral definitions risk definitions.[11] Hence, there appears to be no clear consensus on a single definition of risk. In his book Effective Opportunity Management for Projects, David Hilson makes the case that this neutral definition is becoming more prevalent in academic and professional circles.[12]

In practice the term risk is normally not merely connected with a deviation of the actual from the planned situation, but also with a negative effect. In a survey that was conducted in the course of the formation of this paper a majority of 76% of the participants stated that risk ha a negative connotation.[13] Hence, risk is percepted as the danger of losses which occur in the general business activities and which result from unfortunate future developments. As this paper aims at being a practical guideline, the more traditional view of risks will be applied. Hence, risks are defined here as:[14]

> Risks are all uncertain events that, if they occured, would have a negative impact on Objectives.

10 See: DeMarco, T./Lister T., Bärentango, 2003, p. 18, see also: Wolke, T., Risikomanagement, 2007, p.1.
11 For "negative"definitions see: Woll, A., Wirtschaftslexikon, 2000, p.650 / Wolke, T., Risikomanagement, 2001, p.1, for neutral definitions see: Project Management Institute, PMBOK, p. 127 / Hillson, D., Management, 2002, p. 30.
12 See: Hillson, D., Management, 2002, p. 31-32.
13 See: Appendix 1: Survey exploring the spread of OM in practice.
14 This definition derived from risk definitions that describe risk as the deviation from the expectancy value (e.g. Woll, A., Wirtschaftslexikon, 2000, p. 650).

Today, opportunities are often regarded as inverse or upside risks.[15] Therefore, preset approaches to Opportunity Management often appear to be simple inversions of existing Risk Management systems. However, it is not sufficient to simply use an inverse Risk Management system for Opportunity Management[16]. A simple inversion of an existing Risk Management system has two main disadvantages: Firstly, it would neglect certain opportunities that do not have a downside and can therefore not be part of existing Risk Management approaches. Secondly, using an existing approach hinders the efficiency of Opportunity Management as it forces the thoughts of the Opportunity Management practitioners into the channels of existing Risk Management systems. People tend to be much more creative when they work aside form specifications in a new environment. Therefore, in order to set up Opportunity Management most effectively it is necessary to develop a new detached Opportunity Management approach that is closely related to existing Risk Management approaches.

In spite of the constraint that risks and opportunities are not congruent, there are large overlapping areas. Risks and opportunities that are part of the overlapping area are congruent and can be mirrored. Wheater an event in this area is a risk or an opportunity depends solely on the nature of its impact. Examples for such events would be a chance of demand, the change of the political environment or over-/underfulfillment of requirements. Events that are not part of the overlapping areas can not be mirrored. These events only occur as positive or negative events. Therefore they represent pure risks, or opportunities. Examples for such events would be frauds, or natural disasters, project feasibility, liquidity, technology spin-off's or maturity opportunities. Figure 3 illustrates the relation of the two terms.

5.2. Positive Deviations From Objectives

"One can only understand life backwards, but one has to live it forwards."

Sören Kierkegaard, Danish philosopher, 1813-1855

As the degree of uncertainty that is connected to future events changes over time (events that come closer can mostly be predicted more precisely), it is necessary to adopt the definitions of possible positive deviations from objectives to this situation. Therefore, in order to obtain coherent and universally applicable definitions it is necessary to cover different perspectives of time. This paper proposes a distinction between three time perspectives whereof one is an ex-ante observation and two are ex-post observations.

15 Hillson, D., Upside Risk, 2004 (source without page numbering).
16 See: Lück, W., Chancenmanagement, 2002 (source without page numbering).

Figure 3: Risks and Opportunities as partially congruent terms, source: own illustration

Ex-ante Observation

Ex-ante means that the observation illuminates the future.[17] Hence, all assumptions are based on empirical values. The outcomes of assumed events are subject to uncertainty. All events in this observation are characterized by three dimensions: predictability, probability and impact. Following this observation, it is important to emphasize that impact and probability represent scaleable magnitudes, whereas predictability is a binary value. All predictable events can be foreseen with a certain probability and impact. All events that are not predictable can neither be connected to a certain impact, nor to a certain probability of occurrence – this is due to the fact, that the event itself is not known. However, the fact that an event is not known to an individual person does not mean that the event itself can not be foreseen by anybody. Nevertheless, at the moment of observation the event is invisible to the company. In the context of Opportunity Management, all events in an ex-ante observation can be clustered in two areas by using the terms chance and lucky strike.[18] Figure 4 shows such an ex-ante scenario.

5.3. Lucky Strike

Lucky Strikes arise through a “stroke of luck” - they have been invisible to the company before. Once they appear, they present themselves to the company as opportunities. In an

17 See: About.Com:Economics, search term: ex-ante, see also: The World Bank, online glossary: ex-ante analysis

18 Up to now there is apparently no Opportunity Management related literature in economic science that distinguishes between ex-ante and ex-post observations. The introduction of the terms chance and lucky strike as part of the ex-ante observation is part of the applied research of this paper. The research on this topic found no existing application of the term lucky strike in economic science.

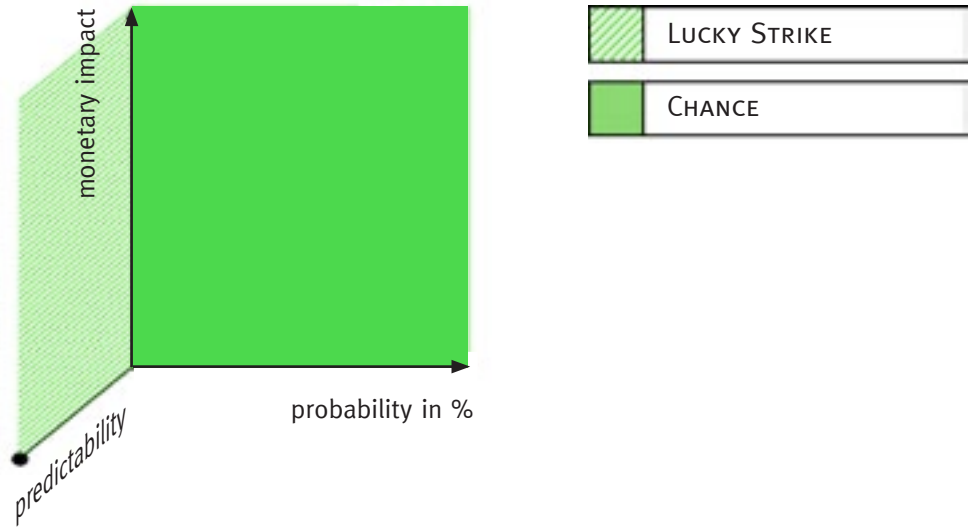


Figure 4: Possible positive Deviations from Objectives in an Ex-Ante Observation, source: own illustration

ex-ante observation, lucky strikes are not predictable. Therefore, they appear as invisible events in a third dimension. In an ex-post observation, lucky strikes appear as opportunities with very low probability of occurrence.

> Lucky Strikes are opportunities that arise through a stroke of luck. Before their appearance they are invisible to the company.

5.4. Chance

Considering the colloquial definition of chance as the possibility of the occurrence of a fortunate event,[19] one can establish a close linkage to uncertainty by using this term. As all future events that are predicted in an ex-ante observation are subject to uncertainty, the majority of events in an ex-ante view are chances. As Opportunity Management aims at systematically following up on chances, these need to be influenceable. This means, that it needs to be possible to take enhancing actions. Therefore, this paper applies the following working definition for chances:[20]

> Chances are all uncertain events that could have a positive impact on objectives. Chances need to be influenceable through the implementation of enhancing actions.

19 See: Wissenschaftlicher Rat der Dudenredaktion, Duden, 2000, p. 89

20 Up to now there is apparently no published literature that provides a definition of the term chance in an economic context. Therefore, the working definition of the term chance in the context of Opportunity Management is a result of the applied research of this paper.

Ex-Post Observations

An ex-post observation is done at a later point in time. It responds to the question "what happened to the assumptions of the ex-ante observation?" In the context of Opportunity Management, it is necessary to conduct two different ex-post observations:

The first one provides an overview of all opportunities that presented themselves to the company. Events in this observation can be described by using the terms lucky strike and opportunity.

The second one looks at the final results and considers the impact of the utilized opportunities. All events in this observation yielded in additional profit. Therefore all events in this observation can be specified by the terms added profit due to opportunities and planning uncertainties.

Ex-post Observation I

Figure 5 shows the first ex-post scenario.[21] As described above, all events in this observation can be clustered in two areas: lucky strikes and Opportunities. One can observe, that the name of one of the two areas is equal to the ex-ante observation. However, the second area of "opportunities" is different. It replaces the chance area of the ex-ante observation. The reason for this lies in the persuasibility of uncertainty. The definitions of lucky strikes can be equally applied in an ex-post observation. Therefore, they will not be outlined again.

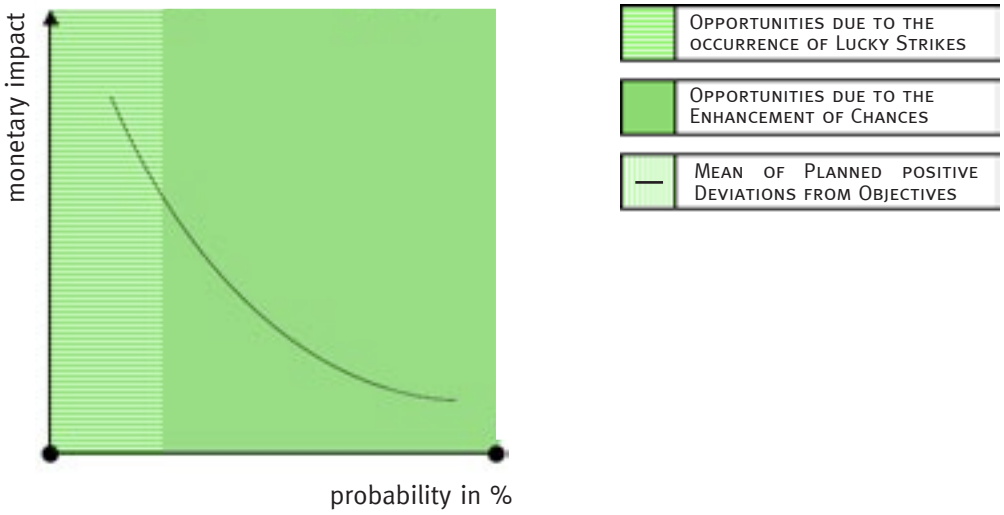


Figure 5: Terminology of Deviations from Objectives in an Ex-Post I Consideration, source: own illustration

21 As Opportunity Management is a very new discipline in economic science, figure 5 is not based on empirical values, but originates from applied research that was conducted as part of this work (e.g. at EADS in an expert interview).

5.5. Opportunity

As it was mentioned in the definition of the term "chance", one aim of Opportunity Management is to systematically follow up on chances. Therefore, the inherent uncertainty of tracked chances vanishes over time. Thus, at the point when the chance is ripe for decision, the term of "chance" is no longer valid due to the lack of uncertainty. Hence, another term needs to be introduced. It is proposed to use the term opportunity for all chances that are ripe for decision and that will occur if one decides to utilize them. Furthermore, the term applies to all positive deviations from objectives that arise from topics that are already part of corporate planning. The colloquial definition of opportunities ("having good prospects"[22]) supports this proposal. This paper will therefore apply the following working definitions for opportunity:[23]

> Opportunities are all mature chances that are ripe for decision.

Ex-post Observation II

As mentioned above, an ex-post observation responds to the question "what happened to the assumptions of the ex-ante observation?" The second ex-post scenario answers this question with regards to the financial impact of the events. Therefore in this observation, there is no more differentiation according to the cause of the positive deviations. Thus, all events in this observation are called "Added Profit". This second ex-post observation is visualized in figure 6.[24]

22 See: Wissenschaftlicher Rat der Dudenredaktion, Duden, 2000, p. 259, see also:

23 Up to now there is apparently no published literature that provides a clear definition of the term opportunity in an economic context. Therefore, the working definition of the term opportunity in the context of Opportunity Management is a result of the applied research of this paper. For a general definition of the rela. tion of chances and opportunities please see: PONS, 2006, search term: opportunity: to get the chance to do something.

24 As Opportunity Management is a very new discipline in economic science, figure 5 is not based on empirical values, but originates from applied research that was conducted as part of this work (e.g. at EADS in an expert interview).

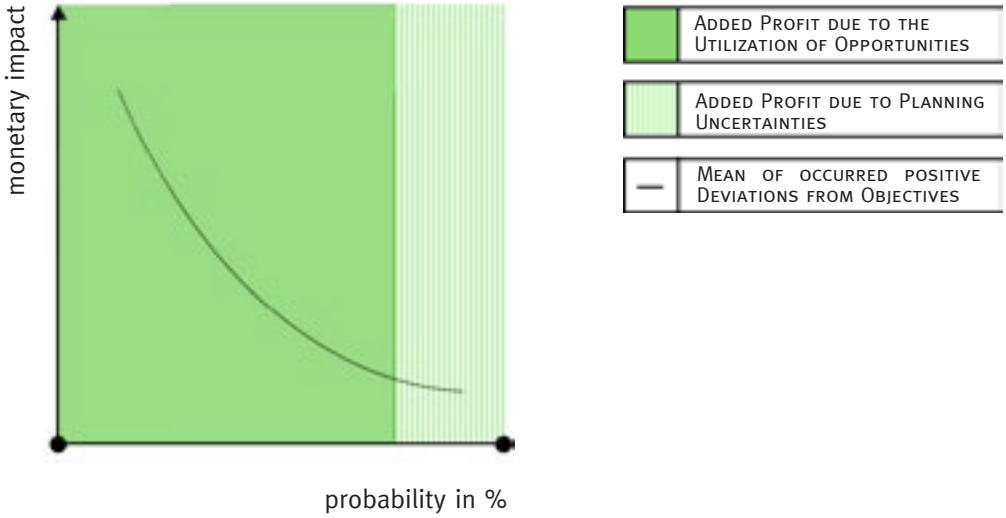


Figure 6: Terminology of Deviations from Objectives in an Ex-Post II Consideration, source: own illustration

5.6. Planning Uncertainty

A planning uncertainty arises due to the inherent insecurity of future developments at the time of corporate planning. As planning uncertainties can not be influenced by enhancing actions, they are not part of the chance area.[25]

> Planning uncertainties are all minor deviations from objectives that arise due to normal fluctuations of planned values. Planning uncertainties cannot be influenced through enhancing actions.

25 Up to now there is apparently no published literature that provides a clear definition of the term planning uncertainty. The working definition that is used in this paper originates from applied research that was conducted as part of this work (e.g. at EADS in an expert interview).

Part II – The Opportunity Management Process

The mission of Opportunity Management is to improve the standard of knowledge about arising chances, to track the right chances, to utilize the right opportunities and, as a prerequisite, to create the necessary Opportunity Management framework. In addition to these active elements, Opportunity Management has the aim of improving the opportunity awareness in the company. The following part of this paper will introduce a state-of-the-art Opportunity Management process.

1. Formulation / Revision of the OM Approach

"The theory is a net, which we cast to catch the world. We work at taking in the meshes of this net."

Karl R. Popper, philosopher, 1902-1994

Economic science owes its existence to the effort of scientists who develop tools to systematically describe, explain and form processes in companies under observation of their environment.[26] Opportunity management is such a process. Referring to the quote of Karl R. Popper, Opportunity Management constitutes the attempt of economic science to develop a systematic process that companies "cast" in order to "catch" as many opportunities as possible.

For that purpose, a cyclic iterative approach to Opportunity Management that closely follows common management regulation circuits is proposed in this paper. Figure 7 illustrates this approach.[27] It consists of six different steps. This initial step is followed by the definition of the Opportunity Management activities. These constructive phases are followed by the active chance identification, chance analysis, chance evaluation and the tracking of the high-potential chances. The cycle ends with the portrayal of the overall chance and opportunity situation and a comparison of the actual situation with the target of the opportunity strategy (controlling).

26 See: Bea, F./Haas, J., Management, 2001, p. 21.

27 In the following chapters the terms chances and opportunities will often be used in combination. Nevertheless, there is a clear difference between the two terms. However, as opportunities are mature chances, the terms are closely related. Therefore, it is reasonalbe to use the terms in combination whenever this is applicable.

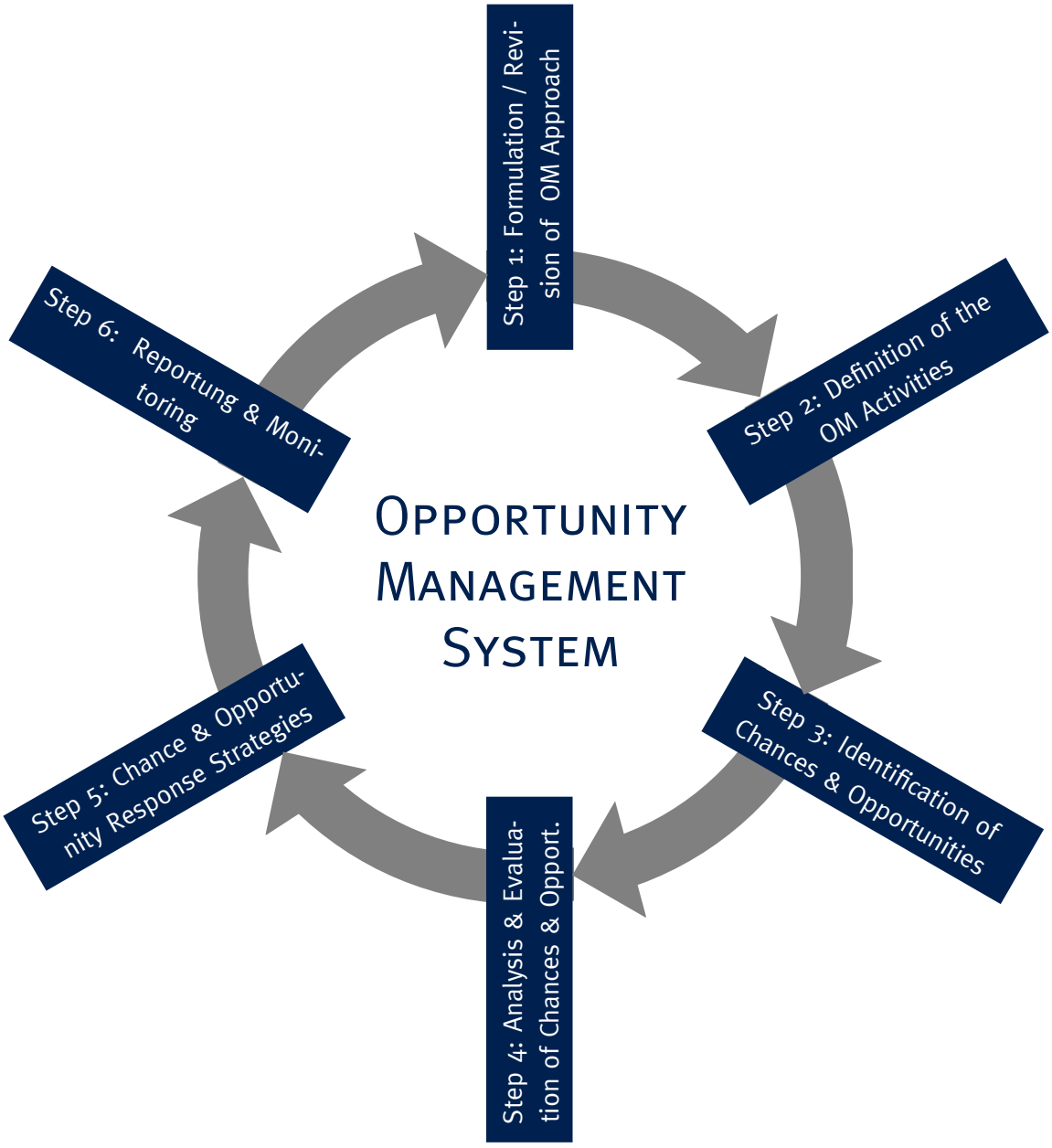


Figure 7: Opportunity Management Circle, source: based on Lück, W., Chancenmanagement, 2002

As Opportunity Management is a very new discipline in economic science,[28] it is assumed that the range of tools and approaches to the topic will rapidly increase in the near future. Despite of the fact, that the approach of this paper is state-of-the-art, a frequent revision of the Opportunity Management strategy and activities is crucial in order to manage opportunities as effectively as possible.

28 See: Lück, W., Chancenmanagement, 2002.

2. Definition of the Opportunity Management Activities

Having defined an approach for Opportunity Management it is now necessary to define the scope of the Opportunity Management activities. Therefore, it is crucial to define objectives and to identify the appropriate stakeholders. Finally, the roles and responsibilities that will to be assigned to the stakeholders need to be defined.

2.1. Objectives

For decades, the picture of the market economy mechanism results in the assumption that profit optimization is the ultimate long term ambition of all companies in today's economic system.[29] Hence, it is reasonable to believe that Opportunity Management should serve this superior target. Therefore, it stands to reason that the target of Opportunity Management on a company level is the same in every company. Ideally this should be true for all functional levels and in all industries:[30]

> Optimization of Profit due to the Identification and the Development of Chances and the Systematic Utilization of Business Opportunities

An additional target of Opportunity Management is the fair presentation of the actual financial situation of a company, a division or a department to the correspondent stakeholders:[31]

> Knowledge of all opportunities as they represent a counterbalance to the shown risks. Only by showing Risks & opportunities it is possible to give a fair presentation of the actual financial situation of the company.

2.1.1. Conflicts of Objectives in the Opportunity Management process

In reality, it is for sure that the defined targets of an Opportunity Management system might differ largely depending on the industry and the hierarchical level of the observation. This is for example due to differences in the predictability and differences in the state of knowledge of the stakeholders. Additionally, depending on the hierarchical level in the company, Op-

29 See: Wöhe, G./Döring U., Betriebswirtschaftslehre, 2002, p. 41.

30 See: Hillson, D., Management, 2002, p. xiii, the objectives were also confirmed by several Opportunity Management practitioners at EADS.

31 See: Hillson, D., Management, 2002, p. 126, see also: Lück, W., Chancenmanagement, 2002, the objectives were also confirmed by several Opportunity Management practitioners at EADS.

portunity Management is strongly influenced by the personal interests of the stakeholders. As most ambitioned employees act very selfish, most stakeholders who influence the overall Opportunity Management system are highly biased. In the economic literature, this phenomenon is known as the principal-agent theory. It implies that every person pursues individual benefit.[32] The following example clarifies this situation:

Assuming that a manager would know all the opportunities in his/her department. Also assuming that his/her department already performs slightly better than planned and that the superior of the manager is hence already pleased with his/her work. Without alleging selfishness to all managers, it stands to reason that most of them would not show any additional opportunities. These would only make their work more difficult as they would surely receive increased target settings for the next period. Additionally, in case that the manager does not show his opportunities he could always use them as a buffer given the case that something else goes wrong in a future period.

From this example one can derive that divisional target setting in terms of opportunities is a very delicate matter: Showing the "real" financial situation (full transparency) might rapidly lead to disadvantageous changes in budgets or target settings of responsible Opportunity Management stakeholders.

According to the principal-agent theory, the obvious conflict of interests leads to an incentive problem for the agent. In order to deal with this problem, it is necessary to implement suitable controlling and incentive systems.[33]

2.2. Stakeholders

As the target of this paper is to set up a holistic approach for an Opportunity Management system, all key stakeholders in all "opportunity areas" have to be taken into observation. This can be accomplished by closely leaning the Opportunity Management approach against Porter's concept of the value chain.

2.2.1. The Concept of the Value Chain

According to Porter, every company has an individual value chain. This chain is embedded in a system of up- and downstream value added chains of suppliers and customers. Porter defines a value chain as follows:

32 See: Kiener, S., Principal-Agent-Theorie, 1990, p. 25.
33 See: Küpper, H., Controlling, 2001, p. 47-48.

Value activities are physiologically and technologically differentiable activities of a company. They are the building blocks that the company uses to build a valuable product for its customers. The margin is the difference of the aggregate value and the sum of all cost that arised through the conduction of the value activities.[34]

Figure 8 shows the original value chain according to Porter. In his concept, he divides the process of value creation into primary and supporting activities. Primary activities are directly connected to the assembly and selling of the product, whereas supporting activities help to accomplish the primary activities. In order to generate a competitive advantage, it is necessary to perform the single activities more cost-efficient or more profitable than competitors do.

Figure 8: Value Chain according to Porter, source: based on Bea, F./Haas, J., Management, 2001, p. 108.

Porter's concept is consistent with the traditional division in operative functions like "logistics", "production", "sales", etc. What was new about the concept was the idea to make the integrated processes subject to strategic observations and to treat the processes as a source of cost and differentiation advantages.

Experts often criticise the concept for solely focusing on internal processes. They argue that the concept neglects environmental influences which are necessary in order to generate a pristine picture of the competitive situation of a company.[35]

34 Porter, M., Wettbewerbsvorteile, 1999, p. 68.
35 See: Bea, F./Haas, J., Management, 2001, p. 108.

2.2.2. The Value Chain as a Socket for the Identification of OM Stakeholders

Opportunity Management ultimately aims at utilizing additional business opportunities. These new opportunities are mostly congruent to the cost and differentiation advantages that are subject to Porter's concept of the value chain. Due to this obvious connection, Porter's concept will be used as a socket to the identification of stakeholders to an effective Opportunity Management. Figure 9 visualizes this approach.

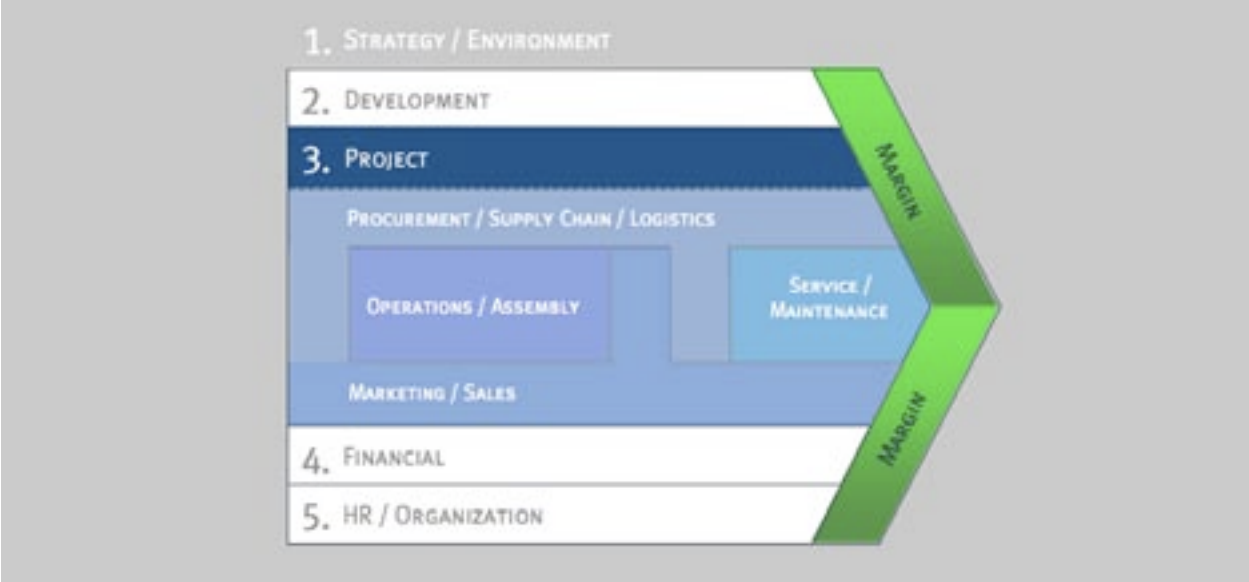


Figure 9: Identification of Areas of C&O Stakeholders in a Company, source: own illustration

Even though there is no differentiation between primary and supporting activities, it contains all areas of Porter's original concept. However, to facilitate the practical realization in the context of Opportunity Management, the original value activities were reordered in four main opportunity areas. In order to give observation to the critics of Porter's concept, a fifth area, which contains environmental opportunities and stakeholders was added. Therefore, it is proposed to distinguish between the following five main areas of opportunities and respectively of their stakeholders:

- Strategic / Environmental Opportunity Area

  Examples for stakeholders in this area would be customers, competitors, or shareholders, suppliers, partners, etc.

- Developmental Opportunity Area

  This area consists of stakeholders who have influence on technology requirements, technology adequacy or technology application.

- Project / Operational Opportunity Area:

  Stakeholders in this area have influence on project related opportunities. These include for example opportunities within the scope of technical management, manufacturing or the supply chain.

- Financial Opportunity Area

  People who for example have influence on the financial market or financial planning are stakeholders according to this perspective. Furthermore, people who are responsible for the handling of contingencies or hidden assets are stakeholders according to this area.

- HR and Organizational Opportunity Area

  In the last of the chance areas, stakeholders influence for example human resources or organizational processes or shared services.

2.3. Roles and Responsibilities

Opportunity Management is important for all companies, independently of their size or the industry they operate in. Nevertheless, these factors have a strong influence on the design of the Opportunity Management system, especially with regards to the Opportunity Management roles and responsibilities that need to be assigned to a number of employees at multiple functional levels within the organization. As an example, one could compare a large corporation with various functional levels that is ultimately responsible to its shareholders, and a small privately owned company. Even though the management of opportunities is equally important in both companies, it is obvious that design of the Opportunity Management roles and responsibilities needs to be very different.

Three different roles for Opportunity Management practitioners are proposed - each of them holds several responsibilities. The roles are applicable independently of the company size. However, the bigger the company is the more Opportunity Management levels need to be established. The following descriptions of the different roles will outline the corresponding responsibilities in detail.

2.3.1. Chance & Opportunity Coordinator (C&O Coordinator)

The C&O coordinator is the spearhead of Opportunity Management for a project, program, division or even a company. He may at the same time be the C&O identifier or enhancement action responsible, and is usually a member of the C&O owner's department or is the C&O owner himself.

The C&O coordinator is responsible for the collection, the support of the assessment and the reporting of all chance and opportunity related data of a project, program, division, or company. He also customizes the Opportunity Management process for his area of responsibility and ensures that potential problems in the Opportunity Management process are anticipated and fixed before impacting cost, time or performance. Additionally, he is responsible for the identification and management of interdependencies of C&Os across different opportunity areas within the value chain. It is his responsibility to perform C&O review meetings on a frequent basis. He coordinates interfaces with subcontractors and partners for C&O identification and reporting. He needs to validate the C&O data with the C&O owner of his department, area, program, or company (in case he is not the same person as the C&O owner). Additionally, he needs to inform the C&O owner in regular intervals about the progress of the C&O updates that he receives (e.g. from the C&O enhancement action responsible). Finally, he communicates the status of all chances and opportunities to all appropriate stakeholders.

2.3.2. Chance & Opportunity Owner (C&O Owner)

The C&O owner is in charge of the chance & opportunity handling and reporting. He is normally the head of a department, area, or company. Therefore, he assigns C&O coordinators within his area of responsibility. However, in some cases he might personally be the C&O identifier or enhancement action responsible himself. In any case he has to ensure and control the optimum C&O enhancement. Hence, ultimately he has to take or delegate the necessary C&O enhancement actions. C&O owners exist in multiple levels within the organization. In general, one can say, that the number of C&O owners relates to the size of the company. In small companies there might only be one C&O owner (in most cases this will be the managing director), in large cooperations there will be a hierarchical distribution of C&O owners, each of them reporting to the superior C&O owner.

2.3.3. Enhancement Action Responsible (EAR)

The EAR takes a specific action for responding to a chance and/or opportunity in a project, program, division, or company. He ensures and monitors the execution of the enhancement actions and informs the C&O coordinator in regular intervals about the progress of the enhancement actions (in case he/she is not the same person as the C&O owner).

3. Identification of Chances & Opportunities

The objective of this step is to identify all existing chances and opportunities. However, in reality this is hardly possible. Therefore, the objective of the opportunity identification is to discover as many chances and opportunities as possible and to describe them in detail. The identification of chances and opportunities is the most important step in the Opportunity Management process, since unidentified chances or opportunities cannot be managed. It is important to understand that unidentified chances and opportunities do still exist. However, unfortunately they remained invisible to the observer. This can have multiple reasons:

- Some "chances" are innately unknowable and can not be predicted in an ex-ante observation. This can either be the case because they are the product of random chance,[36] or as their subject matter was never considered to be a possible chance before. Considering the working definition of the term "chance" from the previous chapter, one can see that a chance needs to be linked to probability. Therefore, in the following we will refer to innately unknowable events as "lucky strikes". Lucky pulls cannot be tracked and can therefore not be part of the chance & opportunity identification.

- Some chances will emerge due to actions that will be taken in the future. These chances are not visible in an ex-ante observation. However, they can be predicted at some point and need to be considered as part of future Opportunity Management cycles.

- Some chances or opportunities will arise from decisions of stakeholders. Therefore, they are invisible for an ex-ante observation. Nevertheless, at some future point in time it will be possible to predict them. Hence, they need to be detected by a future Opportunity Management cycle.

- Some chances or opportunities are hidden from ones perception due to psychological or emotional biases or paradigms. These chances or opportunities are not invisible in an ex-ante observation. Therefore, it is imperative to double-check all results in order to reveal these "perceptually concealed" chances.[37]

- Some positive deviations from objectives will emerge due to simple planning uncertainties. These "utilized" opportunities cannot be tracked systematically, as they are the product of random chance. As long as their impact is considered to be fairly low they will be viewed as simple planning uncertainties and will not be part of the Opportunity Management process.

36 See: Hillson, D., Management, 2002, p. 69.
37 See: Hillson, D., Management, 2002, p. 69.

During the process of C&O identification, it is important to distinguish between causes of chances, genuine chances, opportunities and the impacts of these opportunities. The terms of chance and opportunity were defined earlier in this paper and their definition will not be repeated at this point. Surely, their validity remains in this context. Causes and impacts can be defined as follows:[38]

Causes are events or sets of circumstances that enable the rise of a chance. A cause would for example be the availability of highly skilled personnel on the job market. It is possible that one chance has multiple causes.

Impacts are the effects that are caused by the utilization of the opportunities. They represent the results of chance-management.

Figure 10 visualizes this differentiation graphically. It is important to maintain a clear separation between these terms during the process of chance identification. Causes and impacts for example are not uncertain. If they are erroneously labeled as chances, they will distort the assessment.[39] Furthermore, it is important to realize that in reality most chances have multiple causes. Additionally, it is possible that the utilization of an opportunity can be the cause for new chances. This situation creates a web of interdependencies. An exemplary visualization of interdependencies within Opportunity Management can be found in appendix 1 of this paper.

Figure 10: Distinguishing Cause, Chance, Opportunity and Impact, source: own illustration

The Opportunity Management process aims to identify and assess chances and opportunities in order to enable clear understanding of the C&O landscape. Knowing and understanding the existing C&O landscape is a prerequisite for an effective tracking and management of

38 See: Hillson, D., Management, 2002, p. 70.
39 See: Hillson, D., Management, 2002, p. 70.

chances and opportunities. This is, however, the area where the Opportunity Management practitioner gets least help from current guidelines or practice standards. There are many commonly used techniques for risk identification. However, as Opportunity Management is a relatively new discipline, these methods do not cover the identification of chances and opportunities. Therefore, the following proposals closely follow the latest risk identification techniques and use them as a basis for the identification of chances and opportunities.

This chapter will present a selection of these techniques. As the objective of this paper is to propose an integral approach to Opportunity Management, not all methods will be equally applicable in all areas of the value chain. SWOT analysis for example is a very useful tool for the identification of chances on a strategic level, but will be less effective in operative areas.

3.1. The Opportunity Breakdown Structure

In order to propose a common approach to C&O identification, it is necessary to unite the most effective C&O identification tools under a common umbrella. This procedure enables the use of a common process in all areas of the value chain. This "umbrella function" will be performed by the Opportunity Breakdown Structure (OBS), which is a combination of the adapted value chain and the Work Breakdown Structure (WBS) approach.

In any situation where a lot of data is produced, structuring is an essential strategy. In literature as well as in economic practice, the systematization of risk categories is done in manifold ways.[40] The most obvious demonstration of the value of structuring within project management is the Work Breakdown Structure (WBS). WBS is recognized as a major tool for the project manager because it provides a means to structure the work to be done to accomplish project objectives.[41] The Project Management Institute defines a WBS as "A deliverable-oriented grouping of project elements that organizes and defines the total work scope of the project. Each descending level represents an increasingly detailed definition of the project work".[42]

The aim of the WBS is to portray project work in hierarchical, manageable and definable packages. The results can then be used as a basis for project planning, communication, reporting, and accountability. Whenever risk data is structured in the same way, it enables risk managers to provide a standard reporting of project risks that facilitates understanding, communication and management. Such a hierarchical structure of risk sources is known as a Risk Breakdown

40 See: Wolke, T., Risikomanagement, 2007, p. 6.
41 See: Hillson, D., Risks, 2002, p. 1.
42 See: PMI, Structures, 2001, p. 3.

Structure (RBS).[43] Following the pattern of the WBS definition above, the RBS is defined here as "A source-oriented grouping of project risks that organizes and defines the total risk exposure of the project. Each descending level represents an increasingly detailed definition of sources of risk to the project."[44]

The value of the WBS lies in its ability to scope and define the work to be done on the project - similarly the RBS can be a very useful help to understanding the risks that a project faces.

In this paper, the "best practice" solution RBS is used as a basis for the conceptualization of a chance and opportunity identification tool. Following the naming of its relatives, it will be referred to as OBS. Following the pattern of the WBS and the RBS definitions above, the OBS is defined here as:

> A source-oriented grouping of project chances that organizes and defines the total chance count of the project. Each descending level represents an increasingly detailed definition of sources of chances to the project.

Following the RBS structuring of Hall & Hulett,[45] figure 11 shows an excerpt of an exemplary OBS which introduces one way of systematizing chances. A full version of this OBS can be found in appendix 2.

In practice, such a breakdown structure can be a very effective tool for opportunity identification as it provides a good overview of all current opportunity categories. Therefore, opportunity practitioners can use the OBS as an opportunity-checklist at any time. In doing so, it is possible to minimise the risk of neglecting certain opportunities. However, as Opportunity Breakdown Structuring is an iterative process, it is not sufficient for opportunity practitioners to rely on past results. Hence, it is essential that every chance and opportunity screening period is combined with a creativity cycle that reviews and completes the present version of the OBS. This process can be facilitated by the use of certain tools that are already established in economic science: Creativity techniques qualify best for the review of internal chances and opportunities. Hence, they are also most suitable for the identification of internal C&O categories. Methods of strategic management can be of great help for the identification of external and strategic chances and opportunities and their corresponding OBS categories. The following chapter introduces a number of these techniques that are most effective for the identification of new opportunity categories.

43 See: Hillson, D., Risks, 2002, p. 1.
44 See: Hillson, D., Risks, p. 1.
45 See: Hall, D./Hullet, D. Project, 2002, p. 30-32.

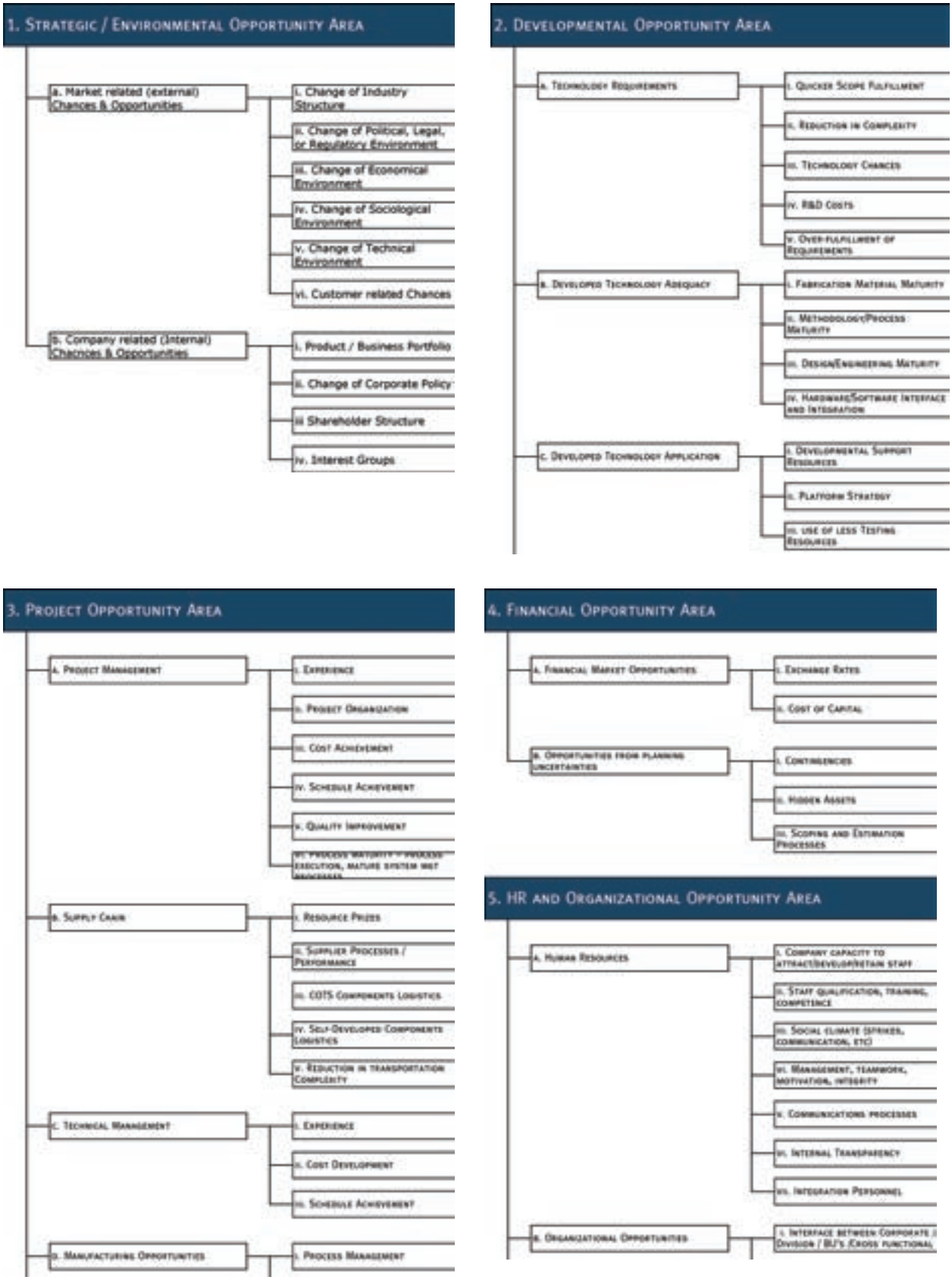


Figure 11: Excerpt from an OBS, source: own illustration

3.2. Creativity Techniques

For many people, creativity sounds like a magic word. It describes an ability that everybody would like to have, especially if there is a difficult task to solve. However, particularly in these situations people are often far from being creative. Nevertheless, despite the fact that creativity cannot be planned, it can be inspired by analytical thinking.[46] After a general outlining of the creative process, this chapter will introduce techniques for the creative generation of ideas that eliminate repressive blockages and boost the creation of visionary and unconventional ideas.

3.2.1. The Creative Process

The first approach to explain the course of creative processes was introduced by Graham Wallace in 1926. He proposed four chronological stages in the process of creativity: Preparation, incubation, illumination and verification.[47] Ever since then, there were multiple approaches of dissecting the creative process in different phases. However, most present creativity cycles are not that much different form Wallace's original approach. Figure 12 shows a state-of-the-art creativity process. However, the similarity of the two processes is not mistakable.

Problem definition - When a problem is recognized, a target for countermeasures needs to be defined. Having defined the targets for possible countermeasures, the structure of the problem needs to be analyzed. This step is of particular importance, as it reveals which information is needed for a solution of the problem. Present knowledge should be reviewed in order to check if existing approaches can lead to a solution. If existing approaches cannot be applied to the problem, an attempt for the generation of new solutions should be started.[48]

Intuitive phase - After a thorough preparation of the problem, an unconscious mechanism is set going in every participant of the process. This mechanism searches for possible solutions to the problem. In order to shift the thoughts of all participants away from the usual channels of thinking there are a number of creativity techniques that can be used. These techniques will be outlined later in this chapter. All of these techniques will be most efficient if they are applied in "creative sessions" in which participants are encouraged to try new ways of thinking. Time is a very crucial factor in this step. Thoughts can not be enforced - they need to ripen. The time span in which a creative thought slowly ripens is called incubation.[49]

46 See: Wack, O./Detlinger G./Grothoff H., Kreativ, 1993, p. VII-VIII.
47 See: Hadamard, J., Mind, 1996, p. 10.
48 See: Nöllke, Matthias, Kreativitätstechniken, 2006, p. 28-29, see also: Wack, O./Detlinger G./Grothoff, 1993, p. 4-5.
49 See: Wack, O./Detlinger G./Grothoff H., Kreativ, 1993, p. 4-5 and Nöllke, M., Kreativitätstechniken, 2006, p. 32-33.

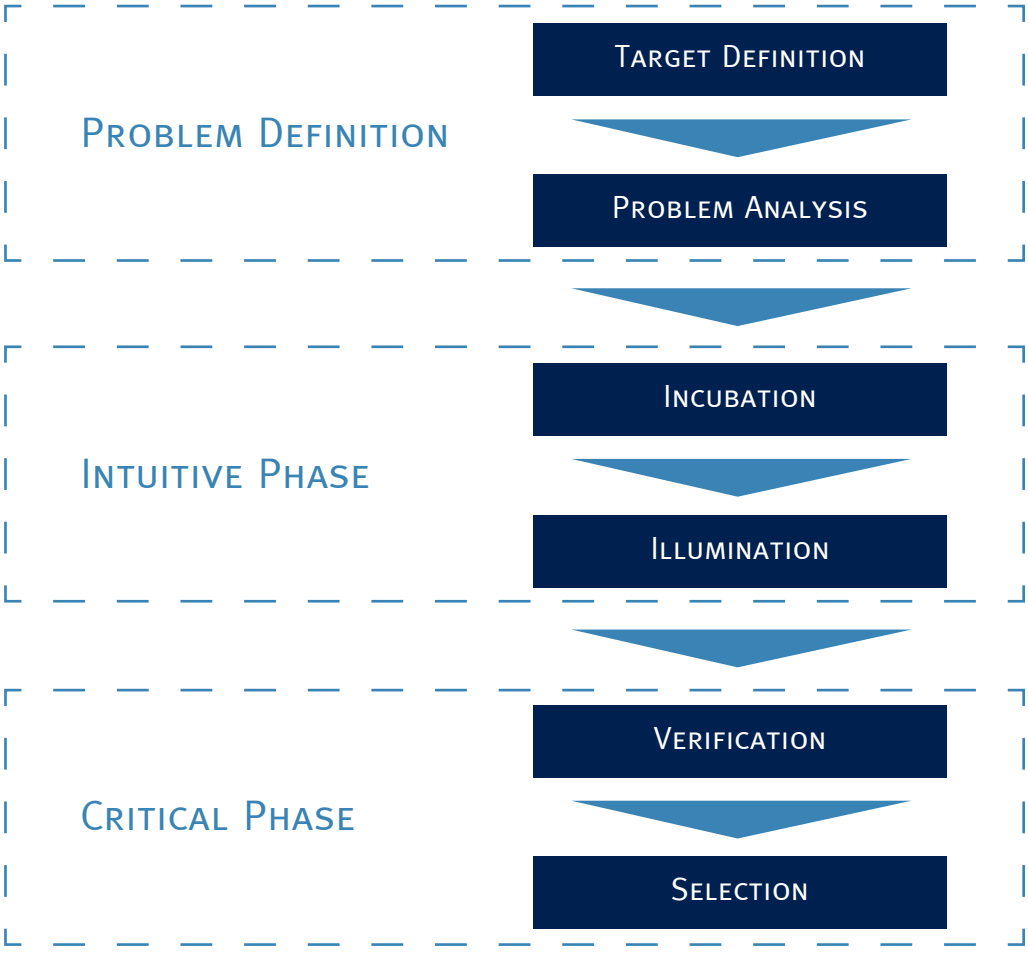


Figure 12: The Creative Process, source: Knieß, M., Kreativitätstechniken, 2006, p. 10.

The kindling idea that satisfies the unconscious criteria of different participants emerges into their consciousness. In the words of Archimedes this step could be described with "Eureka".[50] In economic science this step is also known as "illumination".[51]

Critical phase - The ideas that were created need to be verified. This step is very important as it transforms the idea into an application. Participants no longer need to be creative, instead all proposed ideas need to be critically evaluated. In order to facilitate this work it can be of help to write all ideas out in full. After that a checklist can be applied that helps to establish a ranking.[52] Figure 13 shows an exemplary checklist.

50 See: Perkins, D., Eureka, 2000, p. 6.
51 See: Wack, O./Detlinger G./Grothoff H., Kreativ, 1993, p. 4.5.
52 See: Nöllke, M., Kreativitätstechniken, 2006, p. 38 and Knieß, M., Kreativitätstechniken, 2006, p. 11.

Checklist for the Evaluation of Creative Ideas

1. Is a realization of the idea possible? Yes ☐ No ☐

2. Under which circumstances?

_____

3. Which benefit does the idea have?

_____

4. What are the cost?

_____

5. Which additional effects could the idea have?

_____

6. What are the weaknesses? How can they be reduced?

_____

7. Does the idea fit the personal/corporate values? Yes ☐ No ☐

Figure 13: Idea Checklist, source: Nöllke, M., Kreativitätstechniken, 2006, p. 38-39.

3.2.2. Brainstorming

Brainstorming was developed by Alex Faickney Osborn in the late 1930s. Osborn proposed that groups could double their creative output by using the method of brainstorming. Today, Brainstorming is the most popular creativity technique. It was also used as a basis for the development of a set of other creativity methods.[53]

The requirements for a brainstorming session are: a facilitator, a brainstorming space and something on which to write ideas, such as a white-board, a flip chart or software tool. The responsibilities of the facilitator include guiding the session, encouraging participation and writing down the ideas. The approach works best within a varied group of people. Optimally, participants should come from various departments across the company and have different backgrounds. Even in specialist areas, outsiders often bring fresh ideas that can

53 See: Knieß M., Kreativitätstechniken, 2006, p. 57.

Brainstorming at One Glance
Particularly applicable for: the access of a new problem area, product development, preparation of creative sessions
Number of participants: Groups of 5-12 persons + moderator + minute taker
Expenditure of time: 30-120 minutes
Needed resources: Flipchart
Highlights: Very effective, little effort, easy procedure

Figure 14: Brainstorming at one Glance, Source: based on Boos, E., Kreativitätstechniken, 2007, p. 31.

inspire experts to new ways of thinking. The duration of a Brainstorming session depends on the topic and the number of participants. A Brainstorming cycle has three phases[54]: Problem Definition, Generation of Ideas and Evaluation of Ideas.[55]

Problem definition - In this first step, the problem has to be described as a creative challenge. This is extremely important as a badly designed challenge could lead to lots of ideas that fail to solve the problem. A well designed creative challenge does best generate problem solving ideas. Creative challenges typically start with terms like "In what ways might we...?" or "How could we...?" Creative challenges should be concise, to the point and should only include information that concerns the challenge itself. An example of such a creative challenge would be: "In what ways might we improve product X?" or "How could we encourage more employees to participate in the internal suggestion system?"[56]

Generation of ideas - Once the brainstorming starts, all participants are requested to utter their spontaneous inspirations. This can be accomplished best in multiple consecutive courses. It is the task of the moderator to maintain order and to mesh to creative thoughts of the participants to a finely woven net. A minute taker should note all inspirations on a board or a flip chart. In doing so, no ideas are lost or forgotten. It is important that all participants have a clear view on the notes of the minute taker. In this way, participants are able to keep track of all ideas. This is important as previous ideas are often a starting point for new creative loops. Whilst participants are waiting their turn, it is possible to hand them sheets of paper to note their spontaneous thoughts. Normally, the process on generating

54 See: Boos, E., Kreativitätstechniken, 2007, p. 32-34.
55 See: jpb.com, jpb, 2007, search term: brainstorming.
56 See: jpb.com, jpb, 2007, search term: brainstorming, compare also: Klein, R./Scholl, A., Planung, 2004, p. 149.

ideas is done in two waves: After the first creative phase, normally after 15-20 minutes there is a "creativity-hole". The topic seems to be egged. Therefore, a short break of about 10 minutes should be made. After that the second creativity phase should pick up and build upon the results of the first phase.[57]

Evaluation of ideas - The third and last phase of the Brainstorming process is the evaluation of the gathered ideas. Thereto, all ideas need to be ordered. After that, participants decide in a group discussion which of the ideas are realizable and which are inapplicable. In case there are multirole ideas left, it is also possible to rank them according to certain criteria. To this end, it is necessary to define a number of criteria for judging which ideas best solve your problem. Examples for such criteria could be, "it should be cost effective", "it should be legal", "it should be possible to finish before July 15", etc. After that, each idea should be given a score from one to five. Once all of the ideas have been scored for each criterion, the scores can be summed and a ranking can be created.[58]

The Laws of Brainstorming

No criticism - Criticism or valuation is only done in the evaluation phase of the brainstorming process, as it hinders the free creation of ideas. As the aim of a brainstorming session is to generate as many ideas as possible, it is essential that the flow of ideas is not interrupted.

Quantity comes before quality - Brainstorming is all about the number of generated ideas. The more proposals are made, the bigger the probability of finding the "winner" gets.

Free course of association - It is wanted that participants play freely with their thoughts. The more unstrained ideas are the better they get. All ideas need to be considered and recorded.

Advancement of the ideas of others - Brainstorming is team work. The advancement of the ideas of others is not only allowed, but highly desired. The footboard approach, the dehiscence on the ideas of others, acts like a multiplier and leads to synergy effects within the group.[59]

57 See: Boos, E., Kreativitätstechniken, 2007, p. 33-34. and Knieß, M., Kreativitätstechniken, 2006, p. 59.
58 See: jpb.com, jpb, 2007, search term: brainstorming and Boos, E., Kreativitätstechniken, 2007, p. 33-34.
59 See: Knieß, M., Kreativitätstechniken, 2006, p. 58.

Anonymous Brainstorming

A possible alteration of the "classical" Brainstorming is the so-called anonymous Brainstorming. Thereby, the participants individually develop possible methods of resolution before the actual brainstorming session. These first solutions are gathered by the moderator who presents them as a starting point for the brainstorming session. The further course of the brainstorming is similar to the normal brainstorming. One big disadvantage of this technique is the fact that most participants are strongly tied to their own approaches. Therefore, one can hardly expect extraordinary creativity within the session.[60]

3.2.3. Mind-Mapping

Mind-Mapping was developed by the British psychologist Tony Buzan in the 1970s. When he felt that there were no creativity and learning techniques available that helped him to accomplish what was expected of him in his studies, he started to research on the topic on his own. [61] He analyzed the ways in which the human brain records and processes information. Mind-Mapping is a result of this research. It uses the insight that visually structured presentations of complex thinking processes in categories, pictures, numbers, symbols and colors can be memorized much easier as it addresses both hemispheres in the human brain. Thus, Mind-Mapping promotes the creation of new ideas.[62] Today, Mind-Mapping is applied in various areas that reach from the planning of studies to the search for ideas in science and research.[63] This chapter focuses on the impact of Mind-Maps on creativity.

Mind-Mapping at One Glance
Particularly applicable for: Planning, structuring of knowledge, creation of topic relatated overviews
Number of participants: Single person or small group (2-3 persons)
Expenditure of time: 30-60 minutes
Needed resources: paper, couloured pens
Highlights: Builds on scientific research about the functioning of the human brain.

Figure 15: Mind-Mapping at one Glance, Source: based on Boos, E., Kreativitätstechniken, 2007, p. 36.

60 See: Knieß, M., Kreativitätstechniken, 2006, p. 59.
61 See: Buzan, T., Mind Mapping, 1998, p. 11.
62 See: Knieß, M., Kreativitätstechniken, 2006, p. 76.
63 See: Nöllke, M., Kreativitätstechniken, 2006, p. 64-65.

Targets of Mind Mapping

Mind-Maps that are used for the generation of creativity do serve multiple targets - the most important ones are:[64]

1. Exploration of all creative possibilities of a given topic.
2. Mental relief of former assumptions over an explicit topic.
3. Enabling new creative thoughts.
4. Creation of a new frame, which enables to reorder former ideas.

The Process of Mind Mapping

Mind-Mapping is relatively easy and can be done alone or in smaller groups of two to three people. The process of Mind-Mapping starts with the search for a superior term that describes the problem. Once this term has been found, it needs to be drawn on the middle of a blank and relatively large piece of paper. The optimal size of the paper depends on the complexity of the topic. In general it is possible to say that the creative Mind-Map always fills the space it is given. Therefore, it is possible to conclude that the more size the paper offers the more ideas the Mind-Mapping process will produce. In the next step, reign is given to creativity. Terms, causes, effects, linkages - everything the brain connects to the starting term needs to be written down and drawn on the Mind-Map.[65] As Mind-Mapping is a creative process, the rules and processes that were described in chapter 3.2.1 are equally applicable for this technique.

The laws of Mind-Mapping

The laws of Mind-Mapping shall increase the intellectual freedom of all Mind-Mapping practitioners. Thereby, it is important not to confuse order with rigidity and freedom with chaos. In reality, spiritual freedom is the ability to convert chaos into order. The Mind-Mapping laws help practitioners to develop this ability.[66]

Use emphasis - Emphasis on one of the main facilitators for the support of the human memory and the increase of creativity. All techniques that are used for the purpose of emphasis can also be used for association and vice versa. In the context of emphasis it is important to stress the importance of pictures in the Mind-Map: pictures should be used for as many points and branches as possible. Words should mainly be used to facilitate the interpretation of the pictures. Also it is important to use multiple colors for each picture. If there is no

64 See: Boos, E., Kreativitätstechniken, 2007, p. 36-37.
65 See: Boos, E., Kreativitätstechniken, 2007, p. 36-37.
66 See: Buzan, T., Mind Mapping, 1998, p. 11.

possible corresponding picture to a term that is connected to the topic of the Mind-Map, it is possible to highlight the term itself by coloring it or by writing it in 3D.[67]

Use associations - Besides emphasis, associations are the other main facilitator when it comes to the increase of memory capacity and creativity. The most popular techniques that are used for association are arrows, colors and codes. With the help of arrows it is possible for the eye to immediately connect different parts of the Mind-Map. Arrows can have different sizes and forms - they provide a spacial direction to the thoughts. Colors represent one of the most effective tools for association as they can be used to highlight multiple connections within the Mind-Map. Colors quicken the access to the information and broaden the scope of creativity. Codes enable connections between different areas of the Mind Map. Codes can be everything from numbers to geometric forms like stars or tickmarks.[68]

Strive towards Clarity - Unclarity clouds the human perception. Therefore, all notes need to be easily readable. Hence, all words should be written in block characters as they dispose of a clear form that facilitates reading. Furthermore, it is recommended to write only one key-word per line. The line that belongs to a key word should be as long as the word itself. The key words should be written on the lines - this facilitates the assignment of the words to the lines. Central lines (branches) should be thicker than the outer lines. Completed branches of the Mind-Map should be "embraced" by a visual boundary.[69]

3.2.4. Method 6-3-5

The method 6-3-5 was developed by the consultant Bernd Rohrbach in 1969.[70] The fundamental idea is similar to brainstorming. However, all ideas are recorded in writing. The application area for the method 6-3-5 has almost no restrictions - however, there are more suitable solutions for very complex problems.[71]

Procedure

A group of six persons is handed 6-3-5 formulars. These formulars have three columns and six rows. An exemplary 6-3-5 formular is shown in figure 17.

After the group has received the formulars, the problem needs to be discussed and defined.

67 See: Buzan, T., Mind Mapping, 1998, p. 97-99.
68 See: Buzan, T., Mind Mapping, 1998, p. 100-101.
69 See: Buzan, T., Mind Mapping, 1998, p. 101.
70 See: Rohrbach, B., Kreativ, 1969, p. 73.
71 See: Nöllke, M., Kreativitätstechniken, 2006, p. 60-61.

Method 6-3-5 at One Glance
Particularly applicable for: concrete problems of low to mid complexity that require concrete solutions
Number of participants: Group of 6 persons
Expenditure of time: 30-50 minutes
Needed resources: Prepared 6-3-5 formulars
Highlights: No need of a moderator, easy procedure, little time effort

Figure 16: Method 6-3-5 at one Glance, ource: based on Boos, E., Kreativitätstechniken, 2007, p. 48.

Problem Definition:		Participants:
Solutions:		Date:
1.1.	1.2.	1.3.
2.1.	2.2.	2.3.
3.1.	3.2.	3.3.
4.1.	4.2.	4.3.
5.1.	5.2.	5.3.
6.1.	6.2.	6.3.

Figure 17: Proposal Collective Sheet for the Method 6-3-5, source: own illustration.

After that, each of the participants has five minutes time to record three possible solutions in the formular (one in each column). Thereafter, the formular is passed on to everyone's neighbour (in clockwise direction). The neighbour seizes the solution of his predecessor and enhances his suggestions by making three additional suggestions (and recording them into the second column). Again, participants have five minutes time to complete the task.

Afterwards, the form is passed clockwise and the next participants contributes three sug-

gestions to the form. This is done until all six participants contributed to each of the forms. In the end, all proposals are checked for their applicability.[72]

The method 6-3-5 can produce a remarkable number of 108 (3x6x6) ideas within only 30 minutes. Practice has shown, that the number of participants can be raised to eight without any difficulty and that the time that the participants get to record their solutions should be handled more flexible, especially in the later rounds (as participants need more and more time to read and consider the ideas of their predecessors). During the process it should be relatively quiet. [73]

3.2.5. Collective Notebook

The method was developed by John Haefele of Proctor and Gamble in the 60's. It is a very special creativity technique as it enables participation of an unlimited number of people, who do not need to be in the same place. Another key advantage is that the idea generation is extended over several weeks, which extends the incubation period and enables the

The Collective Notebook Technique at One Glance
Particularly applicable for: Complex Issues
Number of participants: Unlimited
Expenditure of time: 2-4 weeks.
Needed resources: One Notebook for each participant
Highlights: Areal and temporal independance of all participants

Figure 18: The Collective Notebook Technique at one Glance, Source: based on Boos, E., Kreativitätstechniken, 2007, p. 54.

treatment of complex issues.[74]

72 See: Knieß, M., Kreativitätstechniken, 2006, p.70-72.
73 See: Klein, R./Scholl, A., Planung, 2004, p. 150-151.
74 See: Boos, E., Kreativitätstechniken, 2007, p. 54.

Procedure

Each participant is provided with a notebook (by the opportunity manager) describing the course of action and giving a broad problem statement. During the defined timeframe, all participants note all problem related ideas they have into the notebook. These ideas can be with regard to problem analysis, problem appraisal or possible solutions. The defined timeframe should be within 2-4 weeks. A shorter timeframe will reduce the effectiveness as participants would not have enough time to intensively think about the problem. A longer timeframe holds the danger that some participants loose motivation. The method is most effective when all participants carry their notebook at all times. In this way, they can record sudden inspirations at all times. This is very helpful, as the human brain often works best on solutions to problems when the mind superficially is concentrated on something else. In order to force all participants to concentrate on the problem on a regular basis, each participant is required to record at least one proposal per day.[75]

After the expiration of the defined timeframe, the coordinator gathers and analyzes the notebooks of all participants. The compilation of all promising ideas can be done in one or multiple sessions with all participants. It is also possible to define a committee that performs the compilation of the ideas.

Another variant of the collective notebook technique was developed by Pearson in 1979. It brings the original version closer to the Delphi technique. Participants are provided with notebooks describing the procedure and giving a broad scenario-prediction task. For up to two weeks each participant writes one idea per day in the notebook and then exchanges their notebook with a pre-assigned partner. Afterwards, the ideas of the partner are studied. Bearing in mind these results, for the next two weeks each participant again records proposals in the notebook (just like in the original version).[76]

Modern communication techniques today enable the creation of a single “virtual” notebook. If every participant gets access to this document, this represents the third variant of the notebook technique.[77] However, due to the default structure, this might lead to the reduction of creativity.[78]

75 See: Knieß, M., Kreativitätstechniken, 2006, p.94 and Boos, E., Kreativitätstechniken, 2007, p. 55.
76 See: Knieß, M., Kreativitätstechniken, 2006, p.94 and Boos, E., Kreativitätstechniken, 2007, p. 55.
77 See: Boos, E., Kreativitätstechniken, 2007, p. 54.
78 See: Buzan, T., Mind Mapping, 1998, p. 84.

3.2.6. Analogy Technique

Within living memory, analogical reasoning has played a key role in creative design. Daedalus for example built his wings according to a biological archetype. Today, analogies are a highly efficient tool for developing state-of-the-art technology: Airplane manufacturers designed the wingleds, according to stork wings and manufacturers of swimming trunks use shark skin as a design specification for their products in order to reduce water resistance.[79]

The usage of the analogy method can lead to completely new approaches. Hereby, the sources of analogies can come from all areas - they can be very close to the original branch, but they can also origin from very different branches and applications. In principle, the application of this method always results in the following central questions: To which extent does one want to leave the own area of expertise to look for analogies? What is the best way to detect possible analogies as early as possible? How can analogies be exploited most effectively? Analogies can only be used in the innovation process if the responsibles have access to the know how of the original area of application. Analogies in distant and seemingly unrelated areas are often not detected as they do not show any similarities to the problem at first gaze.[80]

Analogy Technique at One Glance
Particularly applicable for: Development of new technology
Number of participants: Unlimited
Expenditure of time: depends on the used creativity technique.
Needed resources: depends on the used creativity technique
Highlights: Very Creative Solutions that can hardly be achieved with the use of “standard” creative thinking.

Figure 19: Analogy Technique at one Glance, Source: own illustration

Procedure

The analogy method is conducted in four phases. In practice, the different phases are not necessarily passed through linearly. Often, it is necessary to repeat certain phases - for example if the

79 See: Herstatt C./Engel, D., Analogien, 2006, p. 2-3.
80 See: Herstatt C./Engel, D., Analogien, 2006, p. 7-8.

search for analogies was not successful and if therefore the problem needs to be reformulated. In these cases, companies proceed best iteratively: develop certain abstractions and return to an extended search. The following phase-model was developed by Herstatt and Engel:[81]

Phase one: definition of a search field - The containment of the relevant search field is necessary to define the scope of the further analysis. Therefore, this step provides answers to the questions: How concrete does the problem need to be abstracted? Which surrounding parameters do need to be considered? Is it possible to structure the problem? How does the problem look like from a customer perspective? Is the search for analogies the right strategy to use?

Phase Two: Search for analogies - This second phase is about the identification of possible analogies that could help to solve the problem. Despite the pact that the analogy method itself is a creativity technique, this step requires the use of other creativity techniques like brainstorming, or TRIZ, in order to identify useful analogies. Additionally it is possible to research for analogies by using personal networks or databases.

Phase three: evaluation of the identified analogies - Not every analogy can be diverted from its intended use. Therefore, it is necessary to check all analogies for their transferability. Furthermore, it is important to ensure that the work team understands the analogue system. Lastly it is crucial to check if the chosen solution has the necessary potential for success.

Phase four: transfer of analogies - The fourth and last step of the analogy method concerns the implementation of the analogy - it enfolds questions like: How can the analogy be developed? Is it possible or reasonable to develop the analogy internally or is outsourcing an alternative? Are there suitable cooperation partners?

3.2.7. TRIZ

Triz was developed by the Russian scientist Genrich Soulovich Altschuller in the 1940's. During his work as patent officer in the Russian navy, he discovered that very different inventions often had very similar approaches to them. Based on his discovery, Altschuller began to develop a systematic process for the generation of product innovations and product improvements. Ever since then, TRIZ was subject to intensive research in economic science and the number of publications concerning TRIZ is overwhelming. Therefore, it becomes obvious that this paper can only provide a small introduction to this very broad and complex topic.[82]

TRIZ uses manyfold tools and methods that enable the search for creative solutions for every

81 Compare: Herstatt C./Engel, D., Analogien, 2006, p. 5.
82 See: Boos, E., Kreativitätstechniken, 2007, p. 146-147.

problem situation. The tools and methods can be grouped into four core areas: systematic, knowledge, analogies and vision.

TRIZ at One Glance
Particularly applicable for: Development of new products, Improvement of existing products.
Number of participants: Unlimited
Expenditure of time: One month - many years, or even continuous use.
Needed resources: Standard workplaces, internet
Highlights: Facilitated product development

Figure 20: TRIZ ot one Glance, Source: based on Boos, E., Kreativitätstechniken, 2007, p. 146.

Systematic

TRIZ starts with a systematic in depth problem analysis and target definition. The most important tools in this area are:[83]

Innovation checklist - Before the development or improvement process can start, it is important to get a clear picture of the initial situation. In this connection, the innovation checklist helps the TRIZ practitioner to document all available resources, possible approaches to potential solutions and possible restraints. Figure 21 shows all core elements of a TRIZ checklist.

Problem definition - The aim of the problem definition is to discover all negative side-effects that hinder the achievement of the Ideal Final Result (IFR). This is mostly accomplished by using a cause-effect diagram that visualizes the relation of good and bad effects. If all causes and effects are known and visualized, it is possible that the solution of a minor secondary problem solves the main problem as a whole.

Ideal conception - Description of the ideal situation. How would the perfect solution look like? Altschuller once said, that the ideal machine would provide its function without to exist. Even though this conception does not appear to be very realistic, it is important for all TRIZ practitioners to define optimistic targets.

83 Compare: TRIZ-Online, http://www.triz-online.de/triz_tools/default.htm

TRIZ Checklist

1. What information about the system and its environment is available?

- Naming of the system?
- What is the primary function of the system?
- What is the structure of the present or desired system?
- What is the functioning of the system?
- What is the environment of the system?

2. Listing of the available resources and their potential:

- Material Reources
- Functional Resources
- Informational Resources
- Time Resources
- Spacial Resources

3. Information about the problem situation:

- Desired improvement of the system?
- Mechanism and mode of operation of the problem?
- Development history of the problem?

4. Change of the system:

- Which chances?
- Are there any borders that need to be considered?

5. Selection criteria for potential solutions:

- Desired technical characteristics?
- Desired economical characteristics?
- Desired time plan?
- Desired neovelty over the prior art?
- Other selection criteria?

6. History of approaches to the problem

- Earlier attempts to solve the problem?
- Other systems with a similar problem?

Figure 21: TRIZ Checklist, Source: own illustration based on TRIZ-Online (www.triz-online.de/triz_tools/default.htm)

Operator MTC - The operator MTC (M = Material, T = Time, C = Cost) has the aim of providing creative approaches to the problem. For this purpose six scenarios are created:

1. / 2. The available material is unlimited / zero
3. / 4. The available time is unlimited / zero
5. / 6. The available financial resources are unlimited / zero

Anticipated fault determination (AFD) - The search for possible faults is transformed into the task of creating possible faults that would ultimately lead to the failure of the overall system. It is possible to increase the efficiency of this step by using some of the creativity techniques that were discussed earlier in this paper.

Knowledge

Every person, every researcher, every scientist and every engineer has a limited state of knowledge and all of them have preferred ways of thinking, which are mostly close to their areas of work. In order to broaden the horizon of all TRIZ practitioners, TRIZ includes tools that provide state-of-the-art knowledge in many areas. The two most important tools are research databases (especially for patent related research) and the effect lexicon, which contains well-founded knowledge in mechanics, physics, thermodynamics, and chemistry.[84]

Analogies

The area of analogies pools tools that examine the basic elements and parameters for interdependences. Furthermore, analogies can support the systematic search for innovations.[85] This part of analogy research was already described in the previous chapter.

Conflict Matrix - The conflict matrix is one of the core elements of TRIZ. Altschuller filtered 39 technical as well as 40 innovative approaches that show interdependencies from the research of patents. The conflict matrix enables a systematic analysis of these interdependencies. In doing so, it is possible to avoid a product improvement that leads to a worsening in another area.

76 standard solutions - Altschuller identified 76 standard solutions that consistently lead to innovations and product improvements. These standard solutions represent the most important core element of the TRIZ method: concrete problems are taken to a higher level of abstraction - this means they are generalized. After that, it is possible to search for a general solution to the problem. After the solution was found it is readopted to the original problem.

Vision

Today, one of the most difficult tasks in product management is the development and improvement of products with the aim to hold or increase market share. TRIZ enables a prognostic view that lead to the development of “standard development parameters of the

84 Compare: TRIZ-Online, http://www.triz-online.de/triz_tools/default.htm
85 See: Boos, E., Kreativitätstechniken, 2007, p. 146-147.

technical evolution". These standard parameters imply that there is a standard pattern to every product during its development or improvement. If these standard patters are transferred to the improvement and development process, it is possible to steer the development and placement of new or improved products in the market.

The survey-like outlining of the TRIZ method shows that the method is far too complex to discuss it in more detail at this point. However, especially in the context of chances and opportunities that arise as part of product improvements or product innovations, the TRIZ method can be extremely helpful.

3.3. Identification of Strategic Chances & Opportunities

The term "strategy" goes back to the Greek word "strategós", which means military leader. Common synonyms include tactics and calculation.[86] The synonyms of the term already imply its most important characteristic: Strategic behaviour requires a planning period that is followed by calculated actions. Therefore, strategic management focuses on the careful observation of the company environment. The tools that are used for the analysis focus on the observation of certain factors, which might indicate promising or threatening developments.[87] The following chapter will introduce some of the tools that help to identify chances & opportunities on a strategic level. These include early reconnaissance that identifies chances in an ex-ante approach, as well as the STEP analysis, the stakeholder- and the market analysis for the general scanning of markets. As none of the market related opportunities can be utilized without adequate reactions from the market participants, the last part of this chapter will introduce the SWOT analysis as a tool that provides practical guidance for the active tracking of chances and the utilization of opportunities. Figure 22 visualizes this procedure.

Early Reconnaissance

From the present perspective, the development of the early reconnaissance systems was an evolutionary process. Due to the shortcomings of the first and the second generation of early detection systems, the development of the early detection methods took place in three steps:[88]

86 Compare: thesaurus
87 See: Küpper, H., Controlling, 2005, p. 64.
88 Compare: Welge, Martin K./Al-Laham, Andreas, Management, 2003, p. 303.

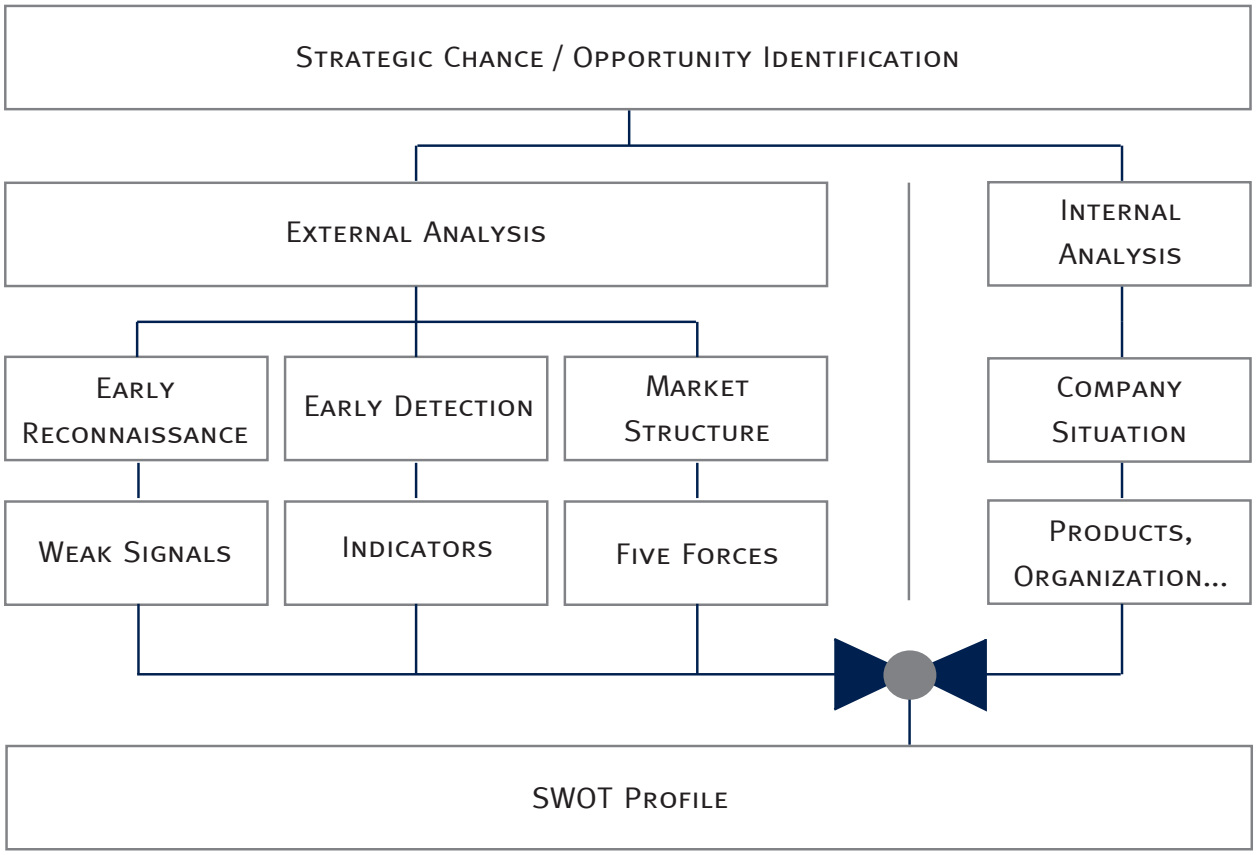


Figure 22: Strategic Chance / Opportunity Identification, source: own illustration

1. Generation: early warning systems (business ratio and extrapolation orientated)
2. Generation: early detection systems (indicator oriented)
3. Generation: early reconnaissance systems (weak signal oriented)

The task of "early reconnaissance" can be described as early action related preparation for the future.[89] In this context, "action related" means that the task of early detection methods is not to predict the future but to be prepared for it.[90] All approaches for early detection rest on the assumption that grave developments do not appear suddenly, but are announced by certain forerunners.[91] Such unexpected strategically relevant circumstances are often referred to as "strategic surprise".[92] In most cases strategic surprises arise form the unsuccessful anticipation of discontinuities.[93] In this context, discontinuities are defined as changes in the environment that are completely new and almost impossible to predict.[94]

89 See: Breid, V., Erfolgspotentialrechnung, 1994, p. 4.
90 See: Dekker, W., Zukunft, 1988, p. 837.
91 See: Ansoff, I., Surprise, 1976, p. 133.
92 See: Ansoff, I., Surprise, 1976, p. 131.
93 See: Bea, F./Haas, J., Management, 2001, p. 289.
94 See: Bea, F./Haas, J., Management, 2001, p. 294.

Today, the most popular approach for the early detection of discontinuities is the concept of weak signals. It was developed by Ansoff in the mid 70's. The idea of the concept is to reduce the time gap between the occurrence and the detection of a discontinuity. These coherences are pointed up in figure 23.

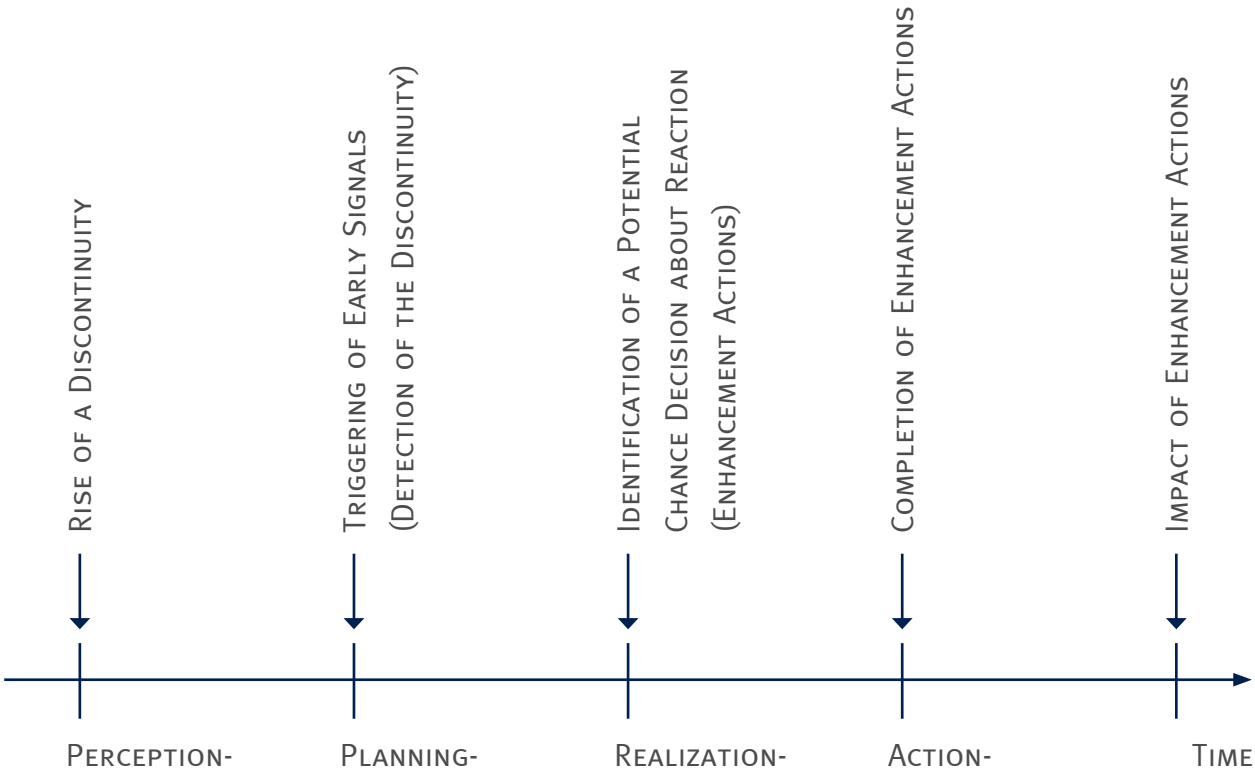


Figure 23: Critical Time Period in the Context of Early detection of Discontinuities, based on Bea, F./Haas, J., Management, 2001, p. 281.

3.3.1. Concept of the weak Signals

Ansoff's concept is based on the assumption that discontinuities signalize themselves in the form of so-called weak signals. These signals are forerunners to the indicators that were observed by the second generation of early detection systems. Therefore, they are mostly not existent in quantitative, but in qualitative form.

The detection of weak signals is done by an undirected scanning of the company environment. The aim is to develop a strategic radar that filters out strategically relevant information in order to detect promising (or threatening) ex-ante developments[95] - chances or even lucky strikes. One of the most appropriate tools for the practical application of the "scan-

95 See: Bea, F./Haas, J., Management, 2001, p. 285.

ning" is the so called "STEP analysis", which will be discussed later in this chapter. After the perception of weak signals, they need to be monitored. This step serves the purpose of discovering repeating patterns that could help to get an a better understanding about discontinuities. Additionally, monitoring should enable the derivation of certain implications for actions.[96]

The efficiency of the concept highly depends on the sensibility, the creativity and the motivation of the practitioners. Only if these factors are present, a maximum number of chances will be identified.[97]

3.3.2. STEP Analysis

Political, economical, sociological and technological factors are usually beyond the firm's control and sometimes present themselves as threats. For this reason some say that the abbreviation PEST is an appropriate term for these factors. However, changes in the external environment also create new opportunities. Therefore, the letters are sometimes rearranged to construct the more optimistic term of the STEP analysis.[98] In the following, the four phases of a STEP analysis are outlined.[99]

Political situation - The questions that have to be answered in this section all want to identify factors which impact on the demand for certain products. Therefore, major political changes and political trends within certain nations, like changes in governments, revolutions, wars, embargoes, creation of free-trade areas, or the deregulation of certain markets, have to be identified and described. Furthermore countries which receive subventions by the UN, the EU, or from other sources, which might lead to an increasing demand have to be identified. After all of these trends and changes have been described, their possible impact on the demand of the firm's products has to be evaluated.

Economical situation - Changes in the structure of the world economy might lead to basic changes in the demand of certain products in certain regions. Hence, it is necessary to understand the global economic trends in order to be able to make the right strategic decisions. Therefore, major changes in the global economic environment have to be identified and described. Regions of outstanding economic growth have to be spotted. Data on factors like the GDP growth, currency value development, or the development of exchange

96 See: Bea, F./Haas, J., Management, 2001, p. 290.
97 See: Bea, F./Haas, J., Management, 2001, p. 294.
98 See: Netmba, 2007
99 See: The following passage was taken from Junge, P., Emerging Markets, 2006, p. 12-13, compare also Bea, F./Haas, J., Management, 2001, p. 102.

rates has to be gathered. In the end, the impact of these changes on the demand of the customers and therefore on the companies products has to be derived.

Sociological situation - The sociological situation includes the demographic and cultural aspects of the external macro-environment. These changes affect customer needs and the size of potential markets. Therefore, data about factors like birth rate, population growth, age distribution, development of the age structure and the development of average household size has to be collected and evaluated.

Technological situation - Changes in the technology hold large chances and opportunities as well as large threats. If technological changes pose a chance or opportunity, or if they pose a threat strongly depends on the question if the firm managed to identify a trend soon enough and reacted to it. Therefore, in this step the latest technological developments have to be described and their impact on the demand of the customers and hence the products has to be derived. One major question which has to be answered is if one of the identified trends could possibly open up new markets and customers.

3.3.3. Stakeholder Analysis

The STEP analysis is a very commonly used tool for the indicator based analysis of markets. However, representatives of the stakeholder approach claim that the indicator based analysis neglects important factors that can have strong influence on the organization: the stakeholders.

Stakeholders are any groups or individuals, who can affect or are affected by the achievement of the organizations objectives. The fact that being affected is enough to include an interest group in the scope of observation broadens the examination beyond the "standard" indicator based on macroeconomic analysis. Interest groups within the scope of a stakeholder analysis could for example be: environmental safety alliances, citizens initiatives, consumer alliances, churches, or associations.[100]

The environmental analysis within the scope of the stakeholder analysis has four steps:[101]

Scanning: identification of stakeholders - This step is about sampling the environment with a very broad angle. The target is to create a map that shows all potential stakeholders. As an example, the stakeholder map of a defense company would include employees, governments, ethnical groups, cross-national agreements, etc. In order to maximise the number of

100 See: Bea, F./Haas, J., Management, 2001, p. 86.
101 See: Welge, M./Al-Laham, M., Management, 2003, p. 193-194.

identified stakeholders, some of the proposed creativity techniques can be used.

Monitoring: identification of relevant trends - This step is about the filtering of developments that could lead to relevant environmental changes. The aim is to capture targets, arguments and instruments of the relevant stakeholder groups.

Forecasting - Different possible scenarios need to be developed. Therefore, tools like the trend analysis, scenario analysis and the Delphi method can be used.

Assessment - In the last step of the stakeholder analysis, the results of the analysis need to be evaluated. The target is to discover if and how the results of the analysis can be the source of chances for the organization.

It is important to mention, that all of the stakeholder groups are a potential source for weak signals. These weak signals are the starting point of early reconnaissance. Therefore ,the stakeholder method is the most important tool for the scanning phase within Ansoff's weak signal approach.[102]

3.3.4. Structural Analysis of the Markets

According to Porter, one key aspect of a firm's environment is the character of the market it competes in. This character holds the potential for significant strategic chances and opportunities as it ultimately determines the strength of the competition within the market and thus its profit potential. As competition in an industry is rooted in its underlying economic structure and goes well beyond the behavior of current competitors, Porter proposed five forces which jointly determine the character of a market and consequently the degree of competition within a market: the threat of new entrants, the rivalry among existing competitors, the bargaining power of suppliers, the bargaining power of buyers and the threat of substitute products.[103] Once the five forces have been described and evaluated, their intensity and impact on the attractiveness of the respective segment can be graphically displayed. Figure 24 shows a generic model of the five forces and their impact on the attractiveness of a branch or segment.[104]

Threat of new Entrants

The threat of new entrants depends on the barriers to entry coupled with the reaction of ex-

102 See: Bea, F./Haas, J., Management, 2001, p. 86.
103 See: Porter, M., 1998, p. 3.
104 See: Porter, M., 1998, p. 3. and Thompson, A./Strickland, A., Management, 1999, p. 68-70.

Figure 24: Forces driving Industry Competition, source: Porter, 1998, p. 17.

isting competitors that the entrant can expect. Barriers to entry are for example economics of scale, product differentiation, capital requirements, switching costs, access to distribution channels, cost disadvantages independent of scale, government policy, or the expected retaliation of competitors.[105]

As new entrants normally enter the market with relatively low volumes, they face a cost disadvantage, because they cannot benefit from the decline of unit price with an increasing absolute volume. Differentiation poses another barrier to entry by forcing new entrants to spend heavily in advertisement, customer service and product differentiation, to overcome existing customer loyalty. Furthermore, the overcoming of market entry barriers often causes the need of large investments e.g. in production facilities. This market entry barrier is particularly important, if the capital is required for risky and unrecoverable up-front advertisement or research and development (R&D). The fourth very important barrier for potential entrants are the one time switching costs which a buyer has to face if he switches from one supplier‘s product to another e.g. cost of new accessories, because the old ones do not fit

105 See: Porter, 1998, p. 17-19 and Camphausen, B., Management, 2007, p. 40-42.

anymore. Another crucial factor which impacts on the potential success of a market entry is the access to distribution and advertising channels. Sometimes, this barrier is so high, that entrants have to establish own distribution channels for their products. Additionally, established firms may have cost advantages which are independent from their size and amount of sold products (economies of scale), such as product know-how, learning or experience curve, use of synergies. In the end, government policy can support a market entry by providing e.g. tax advantages for entrants, but also limit or even foreclose entry into industries with such controls as licensing requirements and limits on access to raw materials.[106]

Apart from market entry barriers, entry can also be deterred by the threat of retaliations. If expected entrants are expected to respond forcefully, then entry may well be deterred. This is especially likely if established firms have substantial resources, industry growth is stagnating, or established firms have a great commitment to the industry.[107]

Intensity of Rivalry among existing Competitors

The intensity of competition of established firms is determined by a number of factors. The most important ones are the capacity utilization ratio, switching cost, strategic stakes and market exit barriers.

If the capacity is not used completely, strong competition can be expected. Therefore, with regards to the intensity of rivalry among competitors within an industry, the capacity utilization is of great importance. The second crucial factor that determines the amount of competition within an industry are switching cost: Competition increases if a firm does not manage to tie a customer to its own product. Another highly important factor that impacts on the degree of competition is the amount of strategic stakes that the competing firms have. If firms have high stakes in achieving success in an industry, competition increases. The last factor that needs to be mentioned in the context of competitive rivalry are exit barriers. If firms have to cope with high exit barriers, competition will be high, as firms are forced to stay in the market.[108]

Pressure from Substitute Products

Substitute products are products, that perform the same function as the original product does (e.g. train/airplane (for medium distances)). The threat of these substitutes increases, the better the price/performance ratio of the substitute product in comparison to the original

106 See: Porter, 1998, p. 17-19.
107 See: Porter, 1998, p. 14.
108 See: Porter, 1998, p. 17-20.

product gets. To defend themselves against these substitutes, firms can either interact (e.g. common strategies, collective acting in terms of advertisement campaigns, generation of common product standards), or act individually (e.g. product, price, promotion, place).[109]

Bargaining Power of Buyers

The more bargaining power buyers have, the smaller the rentability and hence the attractiveness of the industry gets. The bargaining power of buyers can be considered to be high, if they concentrate or purchase large volumes or if the products they purchase from the industry represent a significant fraction of the buyers's costs or purchases. Furthermore, this force can be considered high if the products the buyers purchase from the industry are standardized or undifferentiated and they face low switching costs. If buyers earn low profits or pose a credible threat of backward integration it strengthens their position as well. Last but not least, the amount of information the buyers have impacts their bargaining power as well. The more information a buyer has, the stronger his position is.[110]

Bargaining Power of Suppliers

The more intense the level of bargaining power of the suppliers is, the lower is the level of returns on the side of the buyer. The bargaining power of suppliers is usually high if the supplier group is dominated by a few companies and is more concentrated than the industry it sells to. Another factor which determines the value of this force is the competition within the supplying industry. If suppliers managed to differentiate their products or if they built up switching costs their bargaining position will be stronger. Furthermore the bargaining power will increase if the product of a supplier is an important input in the buyer's business. In the end, a credible threat of forward integration increases the suppliers bargaining position as well.[111]

Creation of a SWOT Profile

After the external analysis has been completed, the results need to be opposed to the company internal strengths and weaknesses. Thusly, a SWOT profile can be generated. The matrix provides possibilities for the methodical generation of new strategies that build and exploit strengths in order to enhance chances and to utilize opportunities and that overcome weaknesses and minimize threats that hinder the effective enhancement of chances and the

109 See: Porter, 1998, p. 23-24.
110 See: Porter, 1998, p. 24-25.
111 See: Porter, 1998, p. 27-29.

utilization of opportunities. [112] An exemplary generic SWOT profile is shown in figure 25. Out of the previous analysis, concrete targets should be extracted and a general line of attack should be formulated. One should put on record the concrete strategy of the company along with corresponding products. Using the SWOT profile these targets should exploit the best possible combination of the firms strengths, weaknesses, opportunities and threats.

SWOT Profile	Strenghts (S) Positive characteristics and advantages of a firm in a certain issue or situation	Weaknesses (W) Negative characteristics advantages of a firm in a certain issue or situation
Opportunities (O) Factors that can benefit, enhance / or improve the issue or situation	S/O Analysis How can strengths be employed to take advantage of the opportunities?	W/O Analysis How can weaknesses be overcome to take advantage of the opportunities?
Threats (T) Factors that can hinder the issue / or situation	S/T Analysis How can strengths be used to counteract the threats that tend to hinder the achievement of the goals and the pursuit of the opportunities?	W/T Analysis How can weaknesses be overcome to counteract threats that tend to hinder the achievement of the goals and the pursuit of the opportunities?

Figure 25: SWOT profile, source: own illustration based on QuickMBA

4. Analysis & Evaluation of the identified Chances

"The excitement that a gambler feels when making a bet is equal to the amount he might win times the probability of winning it."

(Pierre de Fermat, 1623-1662)

This quote reflects the assumption that the value of a chance is connected to two dimensions: its probability of occurrence and its impact. The aim of this step is to establish a ranking of chances and opportunities. Therefore, measures for the impact and the probabil-

112 See: Bea, F./Haas, J., Management, 2001, p. 116.

ity scale of chances and opportunities need to be defined. After that, this chapter introduces the probability / impact grid that facilitates the ranking procedure of C&Os.

4.1. Probability of Occurrence

The degree of uncertainty that is connected to a chance can be described by using the term "probability". Probability can be expressed in two different ways: by using descriptive labels or by using numbers. However, each of these solutions has obstacles. Labels are ambiguous as they are open for individual interpretation. For example the statement "this chance has a high probability of occurrence" might suggest a 99% probability of occurrence to one person while for another it could mean anything above 50%. The ambiguity of labels can be overcome by the use of numbers. However, there are a number of problems with this approach, the biggest one being that probabilities can hardly be defined precisely. Therefore, probability estimates of 46% or 52% might me equivalent meaning about a 50% chance.[113]

However, these problems can be overcome with relatively low effort. The problem of ambiguity can be solved by clearly defining what is meant by each probability label. The problem of the lack of precision can be overcome by defining ranges of probabilities. A solution that is commonly adopted is to combine the two approaches by associating each label with a range of probabilities. [114]This solution exploits the strengths of the single approaches without adopting their deficiencies. Figure 26 shows an exemplary visualization of the combined approach. However, it is important to understand that the set of percentage ranges given in the example is just one of many possible alternatives. The allocation of ranges to the probability labels should happen individually from case to case. A different example for another mode of allocation would be: Low 1-10%, Medium 11-25%, High 26-50% and Very High 51-99%. There can, of course, still be disagreements for events that have probabilities that are close to the boundaries (e.g. 50%). Nevertheless, the provision of ranges for each label seems to offer the best of both approaches.[115]

It should be noted that neither the point 0%, nor the point 100% was considered in the assessment. Chances were defined earlier as all uncertain events that will have a positive impact on objectives. As all events with a probability of 0% or 100% are not uncertain they would by definition not be chances. Hence, they would not be part of chance evaluation. However, events with a probability of 100% could occur as opportunities that wait to be incorporated in the next operative plan. An elaborative description of these planning procedures can be found in chapter 5.

113 See: Hillson, D., Management, 2002, p. 109-110.
114 See: Hillson, D., Management, 2002, p. 110.
115 See: Hillson, D., Management, 2002, p. 110-112.

Probability Label	Range
Low	1-24%
Medium	25-49%
High	50-74%
Very High	75-99%

Figure 26: Combination of descriptive Probability Labels with numerical Definitions, source: own illustration

4.2. Impacts on Objectives

The second dimension of any chance or hence any opportunity is the effect it would have on the objectives if it occurred. This effect is usually called the "impact" of the chance or respectively of the opportunity. The impact dimension can be displayed by using labels or numbers in the same way as it was described before for the probability scale. However, using labels or numbers for the scaling of the impact also creates the same shortcomings that were mentioned before. Figure 27 shows an exemplary combination of descriptive impact labels with monetary values.

Still, there are two big differences between the two dimensions of probability and impact: Firstly, monetary values differ in their relevance depending on company and on project size. For example, an impact of 5 mio. € would be a very high opportunity for a small firm, but only a low one for a large corporation. Therefore, the allocation of monetary values to the labels needs to be defined from case to case. Secondly, whereas one chance (or respectively one opportunity) can only have one probability, it might have several possible impacts. This is due to the fact that all chances and opportunities are part of particular cause-and-effect relations. These radiation effects need to be considered in the impact assessment of chances.[116]

Probability Label	Impact Range (net Impact)
Low	› 0 mio. € - 7.5 mio. €
Medium	› 7.5 mio. € - 15 mio. €
High	› 15 mio. € - 30 mio. €
Very High	› 30 mio. €

Figure 27: Combination of descriptive Impact Labels with monetary Values, source: own illustration

116 See: Hillson, D., Management, 2002, p. 110-112.

With regard to the impact dimension, it is important to understand that the maximum possible amount of monetary impact normally only occurs if certain enhancement actions were successfully completed. As the execution of these actions can involve substantial cost, only the "net impact" of the opportunity should be consulted as the impact value for the P-I grid. The net impact can be calculated as follows:

Net Impact = Gross Impact - Cost of Enhancement Actions

This fact represents a grave difference of Opportunity and Risk Management. Whereas a risk that is not recognized or actively mitigated could still occur with its full amount, this scenario is highly unlikely for an opportunity. Therefore, in Risk Management there is a "gross risk" that describes the value of the potential threat if no mitigation actions would be conducted. As mentioned earlier, this gross risk could occur, hence it is a realistic value. In the context of Opportunity Management the gross value for the impact exists only theoretically. If no enhancement actions are conducted the opportunity itself is unlikely to occur. Therefore, the maximal impact that is realistically achievable is the net impact.

Assessment with the Probability-Impact (P-I) grid

After the measures for the assessment have been defined, the impact and the probability dimension have to be assessed for each identified chance / opportunity. This assessment should be done by the chance coordinator. After that, a ranking of the identified chances and opportunities needs to be created. This can most effectively be done by using a probability-impact grid. Such a P-I grid is a matrix that opposes the probability of chances and opportunities with their corresponding impacts. In practice the used matrixes vary largely in their size from the smallest one being a 2x2 grids up to large 5x5 grids.[117] In order to avoid averaging and to force practitioners to take a firm stand for the two criteria, practice has revealed that grid sizes with even numbers should be preferred.[118] The following explanation will therefore refer to a 4x4 grid. Figure 28 visualizes this approach.

After all chances and opportunities were plotted in the P-I grid, they need to be ranked in terms of their P-I potential. The degree of their P-I potential gives an indication about the degree priority that the chances and opportunities should receive. Figure 29 shows an exemplary split of priorities within the P-I grid.

117 See: Hillson, D., Management, 2002, p. 110-112.
118 Statement form an expert interview at EADS.

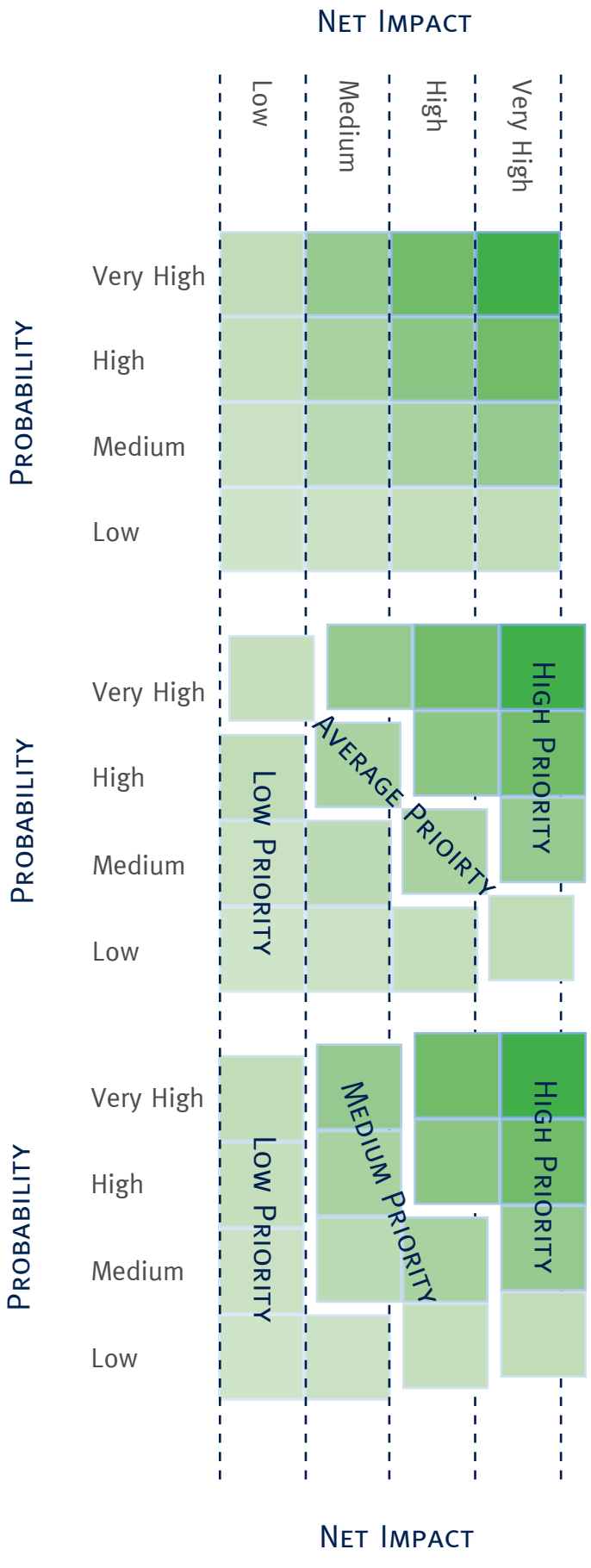


Figure 28: Examplary 4x4 P-I grid, source: own illustration

Figure 29: Examplary priority split within a 4x4 P-I grid, source: own illustration.

Figure 30: Examplary weighted priority split within a 4x4 P-I grid, source: own illustration.

Naturally, there are other plausibilities of prioritizing the P-I results. Especially in those cases where impact is considered more important than probability (or vice versa), the split should be done differently. In those cases, the angle of the split line will not be 45 degrees. Such a scenario is shown in figure 30. The final decision which chance is worth following up on, should rest in the hands of the top level Opportunity Management responsibles.

Due to its visual approach of ranking C&Os, the P-I grid can also be of use for C&O management reporting. The P-I grind can also of use in the context of chance maturity. Up to now, the term "ripe for decision" was not specified any further and it was suggested, that the decision about the maturity of a chance should rest with the responsible C&O coordinator. However, in practice, concepts can hardly be implemented without clear definition of terms. At this point the probability ranking can be of great help as it enables the provision of clear instructions for the responsible C&O coordinators: for example, the maturity of a chance that has a very high probability of occurrence can hardly be denied. Therefore, a chance should (at the latest) be transformed into an opportunity as soon as it reaches this probability stage. However, chances with a high probability of occurrence could (in some cases) also be mature. In this case the final decision should rest in the hands of the responsible C&O coordinator. Chances that have a lower probability of occurrence should remain chances until their probability level has increased.

5. Chance & Opportunity Response Strategies

Previous steps in the Opportunity Management process have concentrated on the identification and analysis of chances and opportunities. However, as diagnosis is not the same as cure, the gathered information has to be actively used to maximise the efficiency of the process. For this reason, the fifth step of the Opportunity Management process deals with possible responses to identified chances and opportunities.

Traditional Risk Management approaches propose four separate possibilities to deal with risks: avoid, transfer, mitigate and accept.[119] The avoidance strategy seeks to remove the threat and therefore its effect (in figure 31, this is visualized by a dead end of the arrow). The risk transfer strategy aims to pass the risk ownership and/or liability for a particular threat to another party. However, it does not change the overall amount of its effect (figure 31 visualizes this situation with a dashed arrow). The purpose of risk mitigation is to reduce the "size" of the risk exposure as far as possible (figure 31 visualizes this strategy by a bleached arrow).

119 See: Young, Peter C./Tippins, Steven C., Business Risk, 2001, p. 123-125.

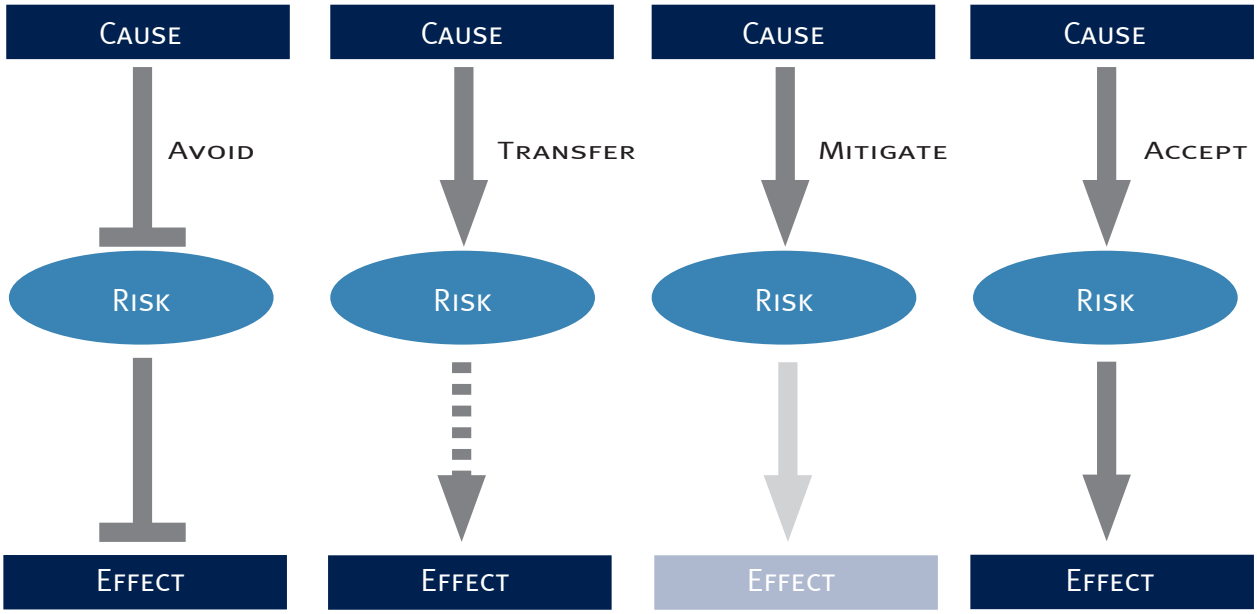


Figure 31: Risk Response Strategies, source: own illustration

After all other options were exhausted a certain degree of risk exposure will remain. These residual risks need to be accepted.[120] Figure 31 graphically illustrates the four approaches.

Present literature suggests that only the naming of the risk response strategies prevents a direct applicability of the strategies for opportunity responses.[121] However, it is suggested that the traditional risk response strategies are inadequate for Opportunity Management and can not simply be mirrored. Clearly it is neither reasonable to avoid an opportunity, nor to transfer it to a third party. The hypothesis that it is not possible to simply transfer the risk response strategies to Opportunity Management is also supported by the fact that the two disciplines have widely differing target settings: Whereas risk response strategies aim at avoiding the risk, reducing its impact, or its probability of occurrence, opportunity response strategies have only one target: utilizing a maximum number of opportunities by enhancing the probability of occurrence.

Therefore, in the context of Opportunity Management, there are only two strategic response strategies:

1. Utilize as many “profitable” opportunities (with a positive net impact) as possible by enhancing their probability of occurrence.
2. Neglect all chances that require a disproportional use of resources and lead to a negative net impact.

120 See: Hillson, D., Management, 2002, p. 179.
121 See: Hillson, D., Management, 2002, p. 174-175.

In order to utilize as many profitable opportunities as possible, Opportunity Management practitioners have to find adequate subordinate strategies that enable the implementation of certain enhancement actions that help to increase the opportunities probability of occurrence. Such an enhancement action could for example be to share the opportunity with a third party that has competencies that are required for a successful opportunity utilization. Figure 32 graphically displays the two opportunity response strategies.

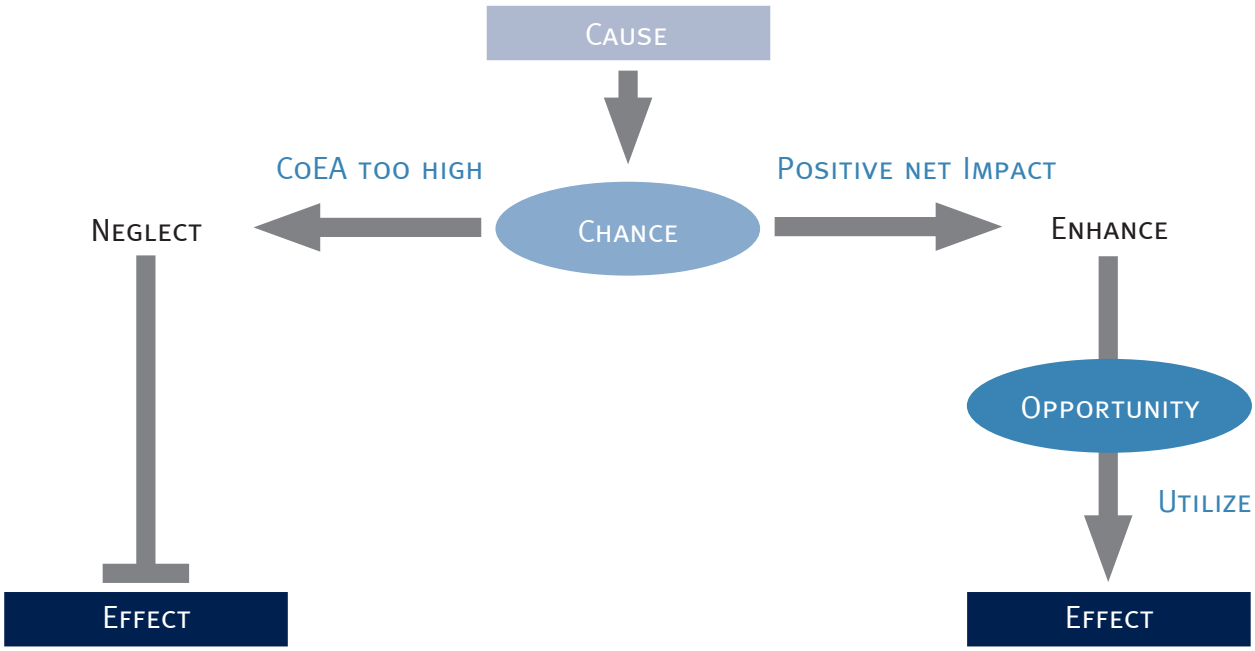


Figure 32: Opportunity Response Strategies, source: own illustration

6. Monitoring and Reporting

The last step of the Opportunity Management cycle is about monitoring and reporting of the chances and opportunities. This step is essential as it contains the evaluation of chances and opportunities and their corresponding enhancement actions. Furthermore, each monitoring cycle of chances decides about a possible transformation into opportunities. Finally, the reporting of chances and opportunities informs different stakeholders about the overall chance and opportunity situation. This step also contains a controlling mechanism that supervises the overall Opportunity Management process.

6.1. Monitoring

The aim of this step is to obtain and review information on the overall chance and opportunity situation of the organization and to assess whether the chances and opportunities are being managed in accordance with company policy. Within Opportunity Management, monitoring has two main tasks:

1. Review of the status of the enhancement actions - Opportunity controlling is essential in order to ensure that the enhancement actions are properly conducted and the planned increases in the likelihood of the occurrence are achieved. Parts of this step include the decision about the status of chances (hence, about their ripeness for decision). An ultimate decision is taken, whether chances will be incorporated in the operative plan at the time of the next planning period. Figure 33 visualizes the transformation of chances into opportunities in the context of corporate planning. It shows a planning scenario that includes three cases: best, base and worst case. Opportunity Management deals with the best case scenarios. These scenarios already include all chances that were previously detected. In figure 33 an exemplary chance with a gross value of 30 is followed up on (t(0)=January 1st, 2007). The cost of the necessary enhancement actions (CoEA) are 10. After all enhancement actions were successfully implemented, the chance is mature for decision and transforms into an opportunity with a net value of 20. In the next planning period (january 1st, 2008) the opportunity will be incorporated into the operative plan. Therefore, it transforms into planned margin. Naturally, figure 33 only shows a simplified scenario. Some chances might for example need a longer time-spam until they are mature for decision. In this case, these chances would still be incorporated into the best case scenario of the next planning period. Another scenario that is not covered in the example of figure 33 would be a an opportunity that is still followed up on by certain enhancement actions. An in depth explanation of the transformation of chances into opportunities in the context of corporate planning can be found in appendix 4.

2. Review of the value development of the chance / opportunity - The ultimate market value of the chance / opportunity can chance over time. Reasons for such changes are most likely to be found in one of the four areas of the STEP analysis (e.g. new technology, or lower demand due to macroeconomic changes). Therefore, C&O controlling needs to examine the development of the market value of the chance / opportunity.

C&O monitoring requires two important preconditions to be fulfilled: firstly, a regular review process needs to be defined and secondly a C&O inventory needs to be introduced:

- Regular review is an essential part of the process as it guarantees not only the correct-

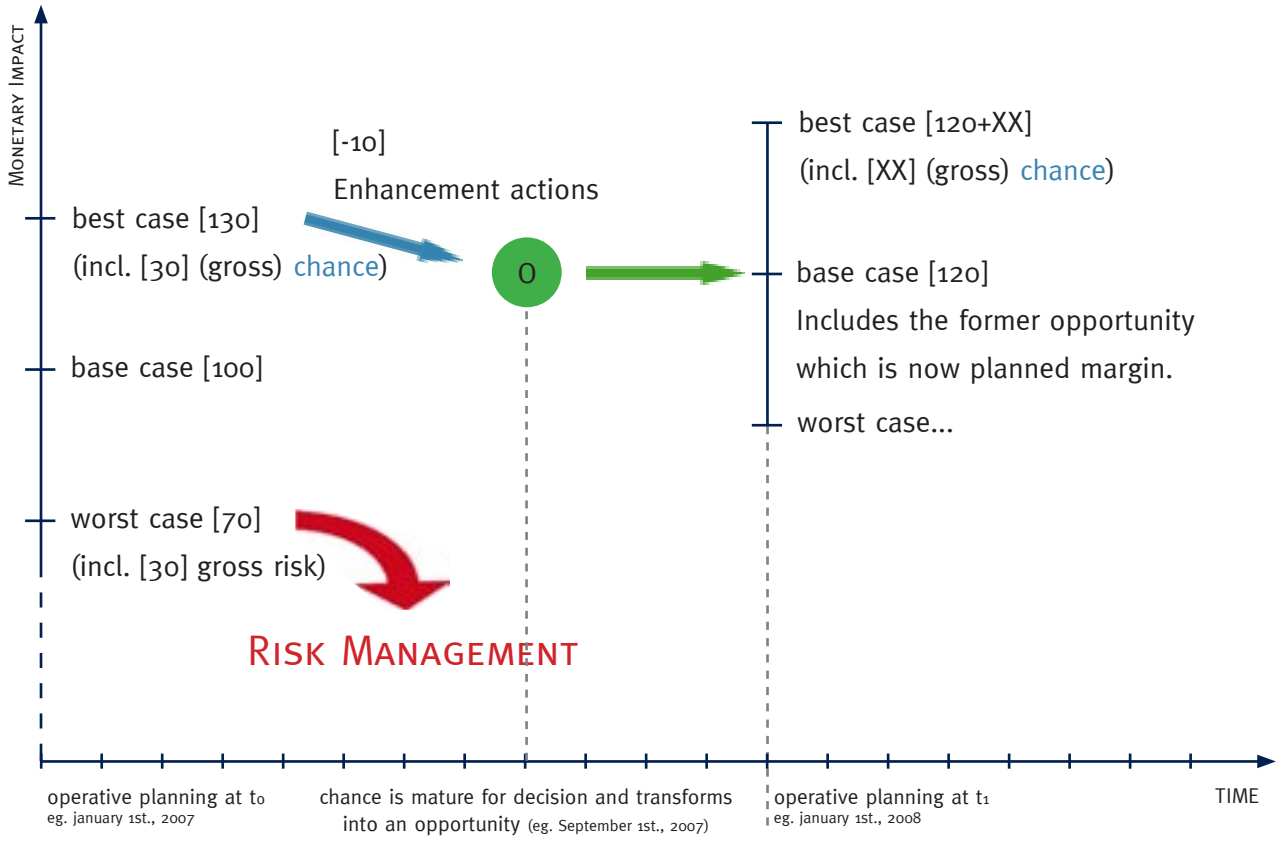


Figure 33: Transformation of Chances into Opportunities, source: own illustration

ness and timeliness of the C&O data but also allows management to attend to the C&Os as soon as they have been identified.

- An updated C&O inventory is another significant part which ensures that all chances and opportunities are taken into account when conducting the reviews. In addition it provides a history for long-lasting chances as well as the most current information on new C&Os. Therefore it is used as the basis for all types of management reports.

In principle, opportunities should be monitored on two different levels: Firstly, the Chance & Opportunity owner should continuously monitor the status of his/her chance(s) and opportunity(s) - secondly, the status of all chances and opportunities should be reviewed by a corporate Opportunity Management department on a frequent (e.g. quarterly) basis. Whilst the continuous monitoring by the C&O owner can be up to his needs and requirements, enterprise assessments should follow a standardized approach and use a common platform. The assessments by corporate Opportunity Management could for example take place as:

- bottom-up assessment linked to the business planning process (e.g. August / September)

- assessment of risks and verification of planned figures with actual figures during year end closing (December)
- assessment of chances and opportunities in the context of the forecasts during the year (e.g. March and June)

6.2. Reporting

Up to now, the Opportunity Management process focussed on gathering relevant data for Opportunity Management. Yet it is not sufficient that individuals know about single chances or opportunities. Therefore, communication is a key element of the Opportunity Management process. Hence, this step of the Opportunity Management process focusses on the illustration and reporting of the overall chance & opportunity situation.

The reporting of C&O data is characterized by the differing information requirements of the report recipients. While the C&O owners need a very detailed view on a limited number of chances and opportunities, the top management demands high level information on the full range of business C&Os. In order to support all these reporting needs, a company wide Opportunity Management department should store a detailed level of C&O data for all business unit C&Os in a central corporate Opportunity Management database. The database should have one main input mask that covers all details of the chance or opportunity. Chances and opportunities should use the same input form. However, it should be possible to change the status from chance into opportunity. The main form should contain entry fields like: description, cause, effect, OBS category, OBS interrelationships, department, owner, coordinator, cost of enhancement actions, net impact, probability of occurrence and anticipated time of occurrence. An exemplary input form can be found in appendix 5.

Out of the data that is reported by the responsible Opportunity Management practitioner, the corporate Opportunity Management management department should create a variety of different reports that cover the differing information requirements of the report recipients and enable a continuous monitoring of the Opportunity Management process. These reports should include an overview of all chances and opportunities that are linked to the department of a certain coordinator. Furthermore, they should display the top 10 chances as well as the top 10 opportunities according to their impact. Additionally, they should calculate ratios amongst OBS categories. Such ratios should compare the top level OBS categories according to overall number and impact of chances and opportunities. Finally, reports that show all enhancement actions according to their due date should be created. All reports should be customized to individual reporting scopes. Apart from adhoc reports for special requirements, the corporate

Opportunity Management department should provide three types of risk reports:

A detailed C&O report for C&O owners and coordinators - The C&O owners and coordinators require a detailed level of C&O information, which in regard to the C&O reporting from the Opportunity Management department means a complete report with all information stored in the enterprise Opportunity Management database. To guarantee the usage of this report as ad-hoc information, the C&O owners and coordinators should have direct access to the reports at all time.

C&O Report for the Top Management - For the information needs of the top management an overview of all C&Os with a thorough consolidated analysis is required to gain an overview of the overall C&O situation. To accommodate this demand, apart from an overview of all C&Os with reduced level of detail, several analyses should be conducted. Those could for example include overviews of top ten chances and opportunities regarding their impact, their likelihood of occurrence, or their OBS categories.

The OM process itself has to be controlled via a continuous improvement process (CIP). This should be done in two areas: Firstly, the practical applicability and implementation within the organization should be controlled. In this context, frequent reviews with the OM practitioners can provide valuable input. Secondly, the latest publications about Opportunity Management should be reviewed in order to check if they contain valuable theoretic input.

Part III - Conclusion and Future Prospects

The last part of this paper will firstly summarize the main findings of this work and give recommendations to top executives. After that, future needs for additional research on the Opportunity Management discipline will be discussed.

1. Summary of main Findings

It is beyond doubt that businesses operate in a highly volatile environment with only one absolute term: uncertainty. Today most companies have reacted to this condition by implementing Risk Management systems that can reduce the potential negative effect that the uncertainty entails. However, most companies neglect the fact that this uncertainty holds potential opportunities as well. Due to this fact, in economic science and in business practice the opinion aggravates that solely focusing on risks is not sufficient to fully exploit the potential of markets and companies. Organizations need to recognize that opportunities exist and that they need to be managed proactively. If organizations fail to do so, potential benefits will be lost, or at best only realized by chance. The important question for each company to answer is weather it already has a structured way of managing opportunities or not. If they do not have one yet, the question is how to implement one as quickly and effectively as possible.

This paper introduces a state-of-the-art Opportunity Management process and provides support for an effective implementation. In contrast to many preset approaches to Opportunity Management that are mostly premature and often appear to be simple inversions of existing Risk Management systems, this paper proposed to establish a closely linked but detached process for Opportunity Management. In addition to the fact that it is not possible to capture all opportunities by a simple inversion of the Risk Management process, the detachment of the Opportunity Management process ensures a more creative and thorough opportunity identification process. This is due to the fact that Opportunity Management practitioners do not need to look at opportunities through a Risk Management frame.

As Opportunity Management is a very sensitive topic in terms of company politics, it is necessary to implement C&O communication barriers within the organization. Opportunity practitioners need to have the possibility to freely identify and follow up on immature chances. This would not be the case if all chances would instantly be reported to superior entities, as they would probably incorporate evidently promising chances into operative

planning. This would however impose an unjustified pressure to succeed to the responsible Opportunity Management practitioner. Therefore, this paper proposed to restrict the reporting to superior entities to opportunities that are ripe for decision. In order to underline this proceeding, this paper created a new terminology for possible positive deviations from objectives and defined four different terms: lucky strikes, chances, opportunities and planning deviations.

In the course of this paper several tools that support Opportunity Management were introduced. Most of these tools originated from other areas of economic science - especially Risk Management. Advocates of a combined Risk Management and Opportunity Management process often claim that the linkage of the processes is favorable because of cost and time savings and existing experience. However, as a detached Opportunity Management process is closely linked to the Risk Management process, it can use the tools and experience as well. Hence, these arguments can not count as reasons for the preferability of either solution. In fact, a detached process has clear advantages over a reversed Risk ManagementThe

Cobined Process

No new process

Common process for managing both risks and opportunities. Same activities for risks and opportunities.

Extension from Familiar Techniques

Most of the currently used techniques in Risk Management can be adapted in order to deal with opportunities.

Minimized Additional Overhead

Existing infrastructure for Risk Management should be able to support a broadened process without requiring significant modifications.

Detached Process

Similar Process

Process for Opportunity Management is closely related to the Risk Management process. Similar activities for risks and opportunities.

Extension from Familiar Techniques

Most of the currently used techniques in Risk Management can be adapted in order to deal with opportunities.

Small Additional Overhead

Opportunity Management process is supported by the existing infrastructure for Risk Management. Additional overhead can be justified by additional advantages of the process.

Combined Process
(continued)

Minimal Additional Training

Due to the common process, there is only little need for additional training in the processes, tools and techniques.

Enhanced Benefits

Expanded effort to look for opportunities - opportunities that might have been missed can be tackled, and some of them might be captured.

Cost-Effective

Use of a single process will result in minimization of cost.

Building on the Commitment of existing Stakeholders

Project teams and other project stakeholders are already used to thinking about downside uncertainty (risk) and managing it proactively through the risk process. The extension to include opportunity is seen as a natural progression.

Detached Process
(continued)

Minimal Additional Training

Due to the similar process, there is only little need for additional training in the processes, tools and techniques.

Maximized Benefits

Maximal effort to scan for opportunities - opportunities that might have been missed need to be identified. Task of Opportunity Management: Capture a maximum number of opportunities.

Cost- and Profit-Effective

Use of a similar but detached process will result in low cost and improved profit.

Building on the Commitment of existing as well as new Stakeholders

Project teams and other project stakeholders are already used to thinking about downside and upside uncertainties. This experience needs to be exploited by the Opportunity Management process. Additionally, new “Opportunity-Only“ stakeholders need to be identified. Only this approach can lead to an area-wide opportunity identification and management. Opportunity Management is not a natural progression but a deliberate approach to improve profit.

Combined Process (continued)

Better Contingency Management

Inclusion of potential upside, as well as downside impacts leads to more realistic contingency calculations.

Increased Team Motivation

Encouraging people to think creatively about ways to work better, simpler, faster, more effectively, etc.

Enhanced Professionalism

Clients who see the organization's teams working to impove benefits on their project will be impressed at the display of professionalism. This will have positive effects on reputation and business growth.

Improved Chances of Project Success

As opportunities are identified and captured, projects will gain benefits that would otherwise have been missed. This will lead to more successful projects.

Detached Process (continued)

Profit Improvement

Inclusion of potential upside, as well as downside impacts will not only help companies to improve project margins but to improve overall profit.

Increased Team Motivation

Encouraging people to think creatively about ways to work better, simpler, faster, more effectively, etc.

Enhanced Professionalism

Clients who see the organization's teams working to improve benefits on their project will be impressed at the display of professionalism. This will have positive effects on reputation and business growth.

Maximized Chances of Project Success

As opportunities are identified and captured, projects will gain benefits that would otherwise have been missed. This will lead to more successful projects and ultimately to profit improvement.

The one outstanding advantage that a detached process offers lies in the different perception of opportunities: Opportunities are more than a simple inversion of risks. Hence, there are a number of unique advantages of a detached Opportunity Management process:

Combined Process
(continued)

Detached Process
(continued)

Easier Adoption of the Process

In the case that the Opportunity Management process needs to be readjusted in order to increase its effectiveness, a detached process is preferable, as it can be adopted more easily.

Opportunity Specialists

Even though many risk practitioners will play an important role in the Opportunity Management process, it is important that there can be employees who do “opportunity only”.

Area-Wide Opportunity Identification

Due to the restricted perspective in Risk Management it is not possible to capture all opportunities by a simple inversion of the Risk Management process. Detaching the Opportunity Management process ensures a more creative and thorough opportunity identification process.

2. Management Recommendations

1. Modern companies should implement Opportunity Management independently of their size or the Branch they operate in. Opportunity Management is important, as a sole focus on Risk Management provides stakeholders with biased information. Furthermore, the implementation of Opportunity Management is important, as missed opportunities represent a loss of profit (opportunity costs).

2. Due to the reasons that were mentioned above and due to its strategic relevance, Opportunity Management should be a top management topic and should be anchored on the highest level within the organization.

3. In order to manage opportunities most effectively, top management needs to define the overall responsibility as well as subordinate responsibilities for Opportunity Management. Depending of the branch and company size top management should either create a functional Opportunity Management team or a fixed Opportunity Management department.

4. Before the implementation of Opportunity Management in practice, companies should clearly define the Opportunity Management process and individually adapt it to their needs.

5. Opportunity Management should not be focussing on certain functional areas of a company. Therefore, top management needs to ensure that the process addresses all areas of the value chain.

6. Opportunity Management is strongly influenced by the personal interests of the OM stakeholders. Therefore, top management needs to ensure the implementation of suitable controlling and incentive systems.

7. The keys to a successful opportunity management lie in the detection and proactive management of chances. A chance that is not enhanced proactively will most probably not become an opportunity. Therefore, in order to maximise the number of utilized opportunities, an “opportunity culture” needs to be created within modern organizations. Employees need to be motivated to constantly scan their environment for new chances and opportunities.

3. Further needs for Research

In the years to come, Opportunity Management will become a more and more important term in many modern organizations. The present discussion in economic science about the relation of risk and Opportunity Management will continue until a preferred solution will emerge in practice. The author of this paper proposes that the application in practice will show the advantageousness of a detached Opportunity Management Process that is not a simple inversion of existing Risk Management Processes.

In order to maximise the number of identified chances and utilized opportunities, future research should attach in three different areas:

1. Future research should focus on people's attitudes towards opportunities within organizations. The area that needs to be researched in this context is Organizational Behaviour. This research should especially focus on the influence of personal incentive schemes on the transparency within the Opportunity Management process. This transparency builds on trustful relationships to upper management levels and is especially important in multi-tier organizations as it ultimately decides about the reliability of organizational planning.

2. The identification of opportunities relies largely on the creativity of the involved persons. Therefore, the second field that needs to be subject to further research is the influence of creativity techniques on the C&O identification process.

3. Finally, more research should be devoted to the role of the principal-agent theory in the Opportunity Management context. Personal biases within organizations hinder an effective Opportunity Management and lead to unfavorable situations. In theory an efficient Opportunity Management system would require complete access to all C&O information at any time.

Bibliography

About.Com:Economs, search term: ex-ante: http://economics.about.com/cs/economics-glossary/g/ex_ante.htm, 24.8.2007, 1.50 p.m.

Barth, Thomas/Barth, Daniela [Controlling, 2004]: Controlling, Oldelburg: Wissenschaftsverlag, 2004

Baum, Heinz-Georg/Coenenberg, Adolf G./Günther, Thomas [Strategisches Controlling, 2004]: Strategisches Controlling, 3. Aufl., Stuttgart: Schäffer-Poeschel, 2004

Bea, Franz-Xaver / Haas, Jürgen [Management, 2001]: Strategisches Managment) Bea, Franz Xaver / Haas, Jürgen: Strategisches Management, 3. Aufl., Stuttgart: UTB, 2001

Boos, Evelyn [Kreativitätstechniken, 2007]: Das große Buch der Kreativitätstechniken, München: Compact Verlag, 2007

Bernstein, Peter L. [Götter, 1997]: Wider die Götter - die Geschichte von Risiko und Riskmanagement von der Antike bis heute, München: Gerling-Akad. Verl., 1997

Breid, Volker [Erfolgspotentialrechnung, 1994]: Erfolgspotentialrechnung, Stuttgart: Schäffer-Poeschel, 1994

Buzan, Tony [Mind Mapping, 1998]: Das Große Mind Mapping Buch, 3. Aufl., London: BBC Worldwide Publishing, 1998

Camphausen, Bernd [Management, 2007]: Strategisches Management - Planung, Entscheidung, Controlling, Oldenburg, Wirtschaftsverlag, 2007

Carrol, Levis [Alice, 2001]: Through The Looking Glass - and what Alice found there, London: Bloomabury, 2001

DeMarco, Tom/Lister, Timothy [Bärentango, 2003]: Bärentango - Mit Risikomanagement Projekte zum Erfolg führen, München: Carl Hanser, 2003

Decker, Wisse [Zukunft, 1988]: Die Zukunft wird und überraschen, aber sie sollte uns nicht überrumpeln, published in Henzler, Herbert A.: Handbuch Strategische Führung, Wiesbaden: Gabler, 1988

Form, Stephan [Controlling, 2005]: Chancen- und Risikocontrolling, Frankfurt: Europäischer Verlag der Wirtschaftswissenschaften, 2005

Hadamard, Jacques [Mind, 1996]: The Mathematican's Mind, Princeton: Princeton University Press

Hall, Dave/Hulett, David [Project, 2002]: Universal Risk Project, http://opim-sun.wharton.upenn.edu/~carpen/316/PMI%20Risk%20Management%20SIG%20Project%20Report.pdf, 2002

Herstatt, Cornelius/Engel, Dieter [Analogien, 2006]: Mit Analogien neue Produkte entwickeln, Harvard Business Manager, August 2006

Hillson, David [Risks, 2002]: Use a Risk Breakdown Structure (RBS) to Understand Your Risks, Proceedings of the Project Management Institute Annual Seminars & Symposium, San Antonio, 2002

Hillson, David [Management, 2002]: The Risk Breakdown Structure (RBS) as an Aid to Effective Risk Management, Presented at the fifth European Management Conference, PMI Europe, Cannes, 2002

Hillson, David [Projects, 2004]: Effective Opportunity Management for Projects, Boca Rayton: CRC Press, 2004

Hillson, David [Upside Risk, 2004]: "Upside Risk": What is it?, www. eurolog.co.uk/apmrisksig/meetings/8Jul04%20What%20is%20upside%20risk.pdf, 26.9.2007, 9.15 a.m.

Horngren, Charles T./Harrison, Walter T./Bamber, Linda [Accounting, 2005]: Accounting, 6th edition, Upper Saddle River (a.o.): Pearson Prentice Hall, 2005

Horváth, Peter, Kaufmann, Lutz [Scorecard, 1998]: Balanced Scorecard - ein Werkzeug zur Umsätzung von Strategien, published in: Harvard Business manager, vol. 5, 1998

Junge, Philip [Emerging Markets, 2006]: Emerging Markets - Customer Acquisition Strategies for the Mobile Communication Industry, Konstanz: Hochschule Konstanz, 2006.

jpb.com [jpb, 2007]: jpb, search term: brainstorming, http://www.jpb.com/creative/brainstorming.php, 3.8.2007, 11.21 a.m.

Kaplan Robert S./Norton, David P. [Scorecard, 1992]: The Balanced Scorecard - Measures That Drive Performance, Harvard Business Review, Vol. 70, 1992

Kiener, Stefan [Principal-Agent-Theorie, 1990]: Die Principal-Agent-Theorie aus informationsökonomischer Sicht, Regensburg: Universität, 1989

Klein, Robert/Scholl, Armin [Planung, 2004]: Planung und Entscheidung, München: Vahlen, 2004

Knieß, Michael [Kreativitätstechniken, 2006]: Kreativitätstechniken - Methoden und Übungen, München: Beck, 2006

KonTrag, §91 II Aktg

Kotler, Philip/Armstrong, Gary [Marketing, 2005]: Priciples of Marketing, 11th edition, Upper Saddle River, 2005.

Küpper, Hans-Ulrich [Controlling, 2005]: Controlling - Konzeption Aufgaben und Intrumente, 3. überarbeitete und erweiterte Auflage, Stuttgart: Schäffer-Poeschel, 2001

Lück, Wolfgang [Chancenmanagement, 2002]: Der Umgang mit Unternehmerischen Risiken - die neue Disziplin Chancenmanagement, Frankfurter Allgemeine Zeitung, 04.02.2002, Nr.29

Netmba [Netmba, 2007]: NetMBA - Business Knowledge Center, www.netmba.com/strategy/pest, 26.6.2007, 9.45 a.m.

Nöllke, Matthias [Kreativitätstechniken, 2006]: Taschenguide Kreativitätstechniken, 5. Aufl., München: Haufe Verlag, 2006

Perkins, David [Eureka, 2000]: The Eureka Effect, London: W. W. Norton & Company, Inc., 2000

PMI [Structures, 2001]: Practise Standarts for Work Breakdown Structures, Pennsylvania: Project Management Institute Inc., 2001

Porter, Michael E. [Wettbewerbsstrategie, 1999]: Wettbewerbsstrategie - Methoden zur Analyse von Branchen und Konkurrenten, Frankfurt/Main: Campus-Verlag, 1999

Porter, Michael E. [Wettbewerbsvorteile, 1999]: Wettbewerbsvorteile - Spitzenleistungen erreichen und behaupten, Frankfurt/Main: Campus-Verlag, 1999

Project Management Institute [PMBOK, 2005]: A Guide to the Project Management Body of Knowledge, 3rd. edition, Newton Square, PA: Project Management Institute, 2004

QuickMBA, search term: SWOT, www.quickmba.com/strategy/swot/, 21.8.2007, 3.45 p.m.

Rohrbach, Bernd [Kreativ, 1969]: Kreativ nach Regeln, published in: Absatzwirtschaft, p. 73-76., 1969

The World Bank, Online Glossary, search term: ex-ante analysis, http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPSIA/0,,contentMDK:20433436~menuPK:2453409~pagePK:210058~piPK:210062~theSitePK:490130,00.html, 12.8.2007, 2.13 p.m.

Thompson, Arthur A./ Strickland, Alonzo J. [Management, 1999]: Strategic Management, Boston: McGraw-Hill, 1999

TRIZ-Online [TRIZ-Online, 2007]:, http://www.triz-online.de/triz_tools/default.htm, 21.8.2007, 11.07 a.m.

Wack, Otto G./Detlinger Georg/Grothoff Hildegard [Kreativ, 1993]: Kreativ sein kann jeder - Kreativitätstechniken für Leiter von Projektgruppen, Arbeitsteams, Workshops und Seminaren; ein Handbuch zum Problemlösen, Hamburg: Windmühle, 1993

Welge, Martin K./ Al-Laham, Andreas [Management, 2003]: Strategisches Management - Grundlagen, Prozess, Implementierung, 4.akt. Aufl., Wiesbaden Gabler, 2006t

Wikipedia [Wiki, 2007]: http://de.wikipedia.org/wiki/Chance, search term: “chance”, 16.7.2007, 5.38 p.m.

Wissenschaftlicher Rat der Dudenredaktion [Duden, 2000]: Der Duden - Band 1: Rechtschreibung, 22. Aufl., Mannheim/ Leipzig/Wien/Zürich: Dudenverlag, 2000

Wolke, Thomas [Risikomanagement, 2007]: Risikomanagement, München: Oldenburg Wirtschaftsverlag, 2007

Wöhe, Günter/Döring Ulrich [Betriebswirtschaftslehre, 2002]: Einführung in die Allgemeine Betriebswirtschaftslehre, 21. Aufl., München: Vahlen, 2002.

Young, Peter C../Tippins, Steven C. [Business Risk, 2001]: Managing Business Risk - An Organization-Wide Approach to Risk Management, New York: Amacom, 2001

Table of Appendixes

Appendix 1 - Survey Exploring the Spread of OM in Practice

There is no doubt that entrepreneurship is closely linked to uncertainty and hence to risk. However, current risk definitions in present literature vary largely in terms of the scope of their risk definition: Does risk only cover the potential negative effects of uncertainty, or is the term rather neutral and covers both, potential positive as well as potential negative effects?

As it was suggested in chapter 5 of the introduction to this paper, economic science tends to using the integrated risk definition that covers both sides of the uncertainty. Nevertheless, ever since the introduction of the KonTraG in 1998 large corporations are bound to using Risk Management. In this context of the KonTraG, risks are seen as all negative development that could threaten the survival of the company[1]. Therefore, in practice up to now risk was used with a negative connotation for almost a decade.

As this paper aims at being of practical help for Opportunity Management practitioners, it was a strong concern to use practically applicable definitions of risks and opportunities.

This survey was conducted in order to examine the prevailing definitions of risks and opportunities in practice. Furthermore, as Opportunity Management is a very new discipline in economic sciences[2], the survey also examined the current spread of Opportunity Management in practice.

Survey Process

The questionnaire was distributed by e-mail to Risk Management practitioners of large corporations. A total of 21 responses were received - representing a response rate of 36%. Respondents came form a wide range of industries, with a high representation of industrial companies (57%), consultants (14%) and IT companies (14%). Figure 33 shows the questionnaire that was sent to the participants via e-mail.

1 see: KonTraG
2 see: Form, S., Controlling, 2005, p. 14.

General Information:	
Company	
Name	
Function	
Department	
Date	

Questions:

1. Does your company perform active risk management?

   ☐ Yes
   ☐ No

2. In your understanding – does the term "risk" has a negative connotation?

   ☐ Yes
   ☐ No

3. Have you ever heard of the term "opportunity management" before?

   ☐ Yes
   ☐ No

4. Does your company actively manage opportunities?

   ☐ Yes
   ☐ No

5. Do you think that the active management of opportunities is (would be) added value to your company?

   ☐ Yes
   ☐ No

Figure 34: OM Survey Questionnaire, source: own illustration

Survey Results

Question 1:

According to the Survey, 100% of the participating companies actively perform Risk Management.

Question 2:

76% of the questioned Risk Management practitioners stated that in their opinion, risk had a negative connotation.

Question 3:

81 % of the questioned Risk Management practitioners stated that they had heard of the term Opportunity Management before the survey.

Question 4:

Only 10% of the questioned companies actively manage opportunities!

Question 5:

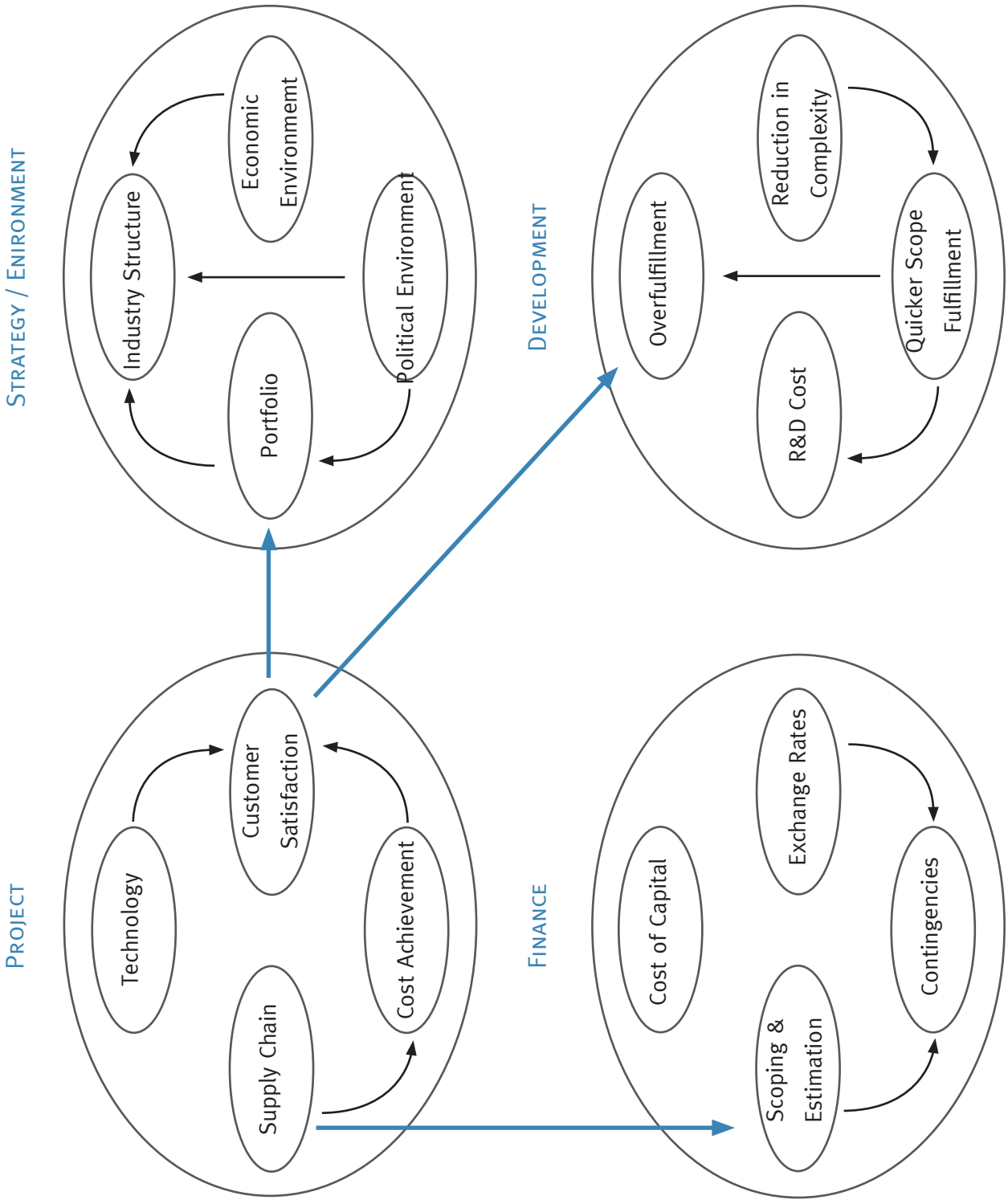
A majority of 86% of the Risk Management practitioners stated that Opportunity Management would be value added to their company!

Analysis of the Results

The results of the survey confirm that a large majority of Risk Management practitioners has heard of Opportunity Management before. The importance of the topic is supported by the fact that 86% of the survey participants consider Opportunity Management System as value added to their company. However, today only 10% of the questioned companies actively manage opportunities. This situation creates a strong need for action in this area of scientific research.

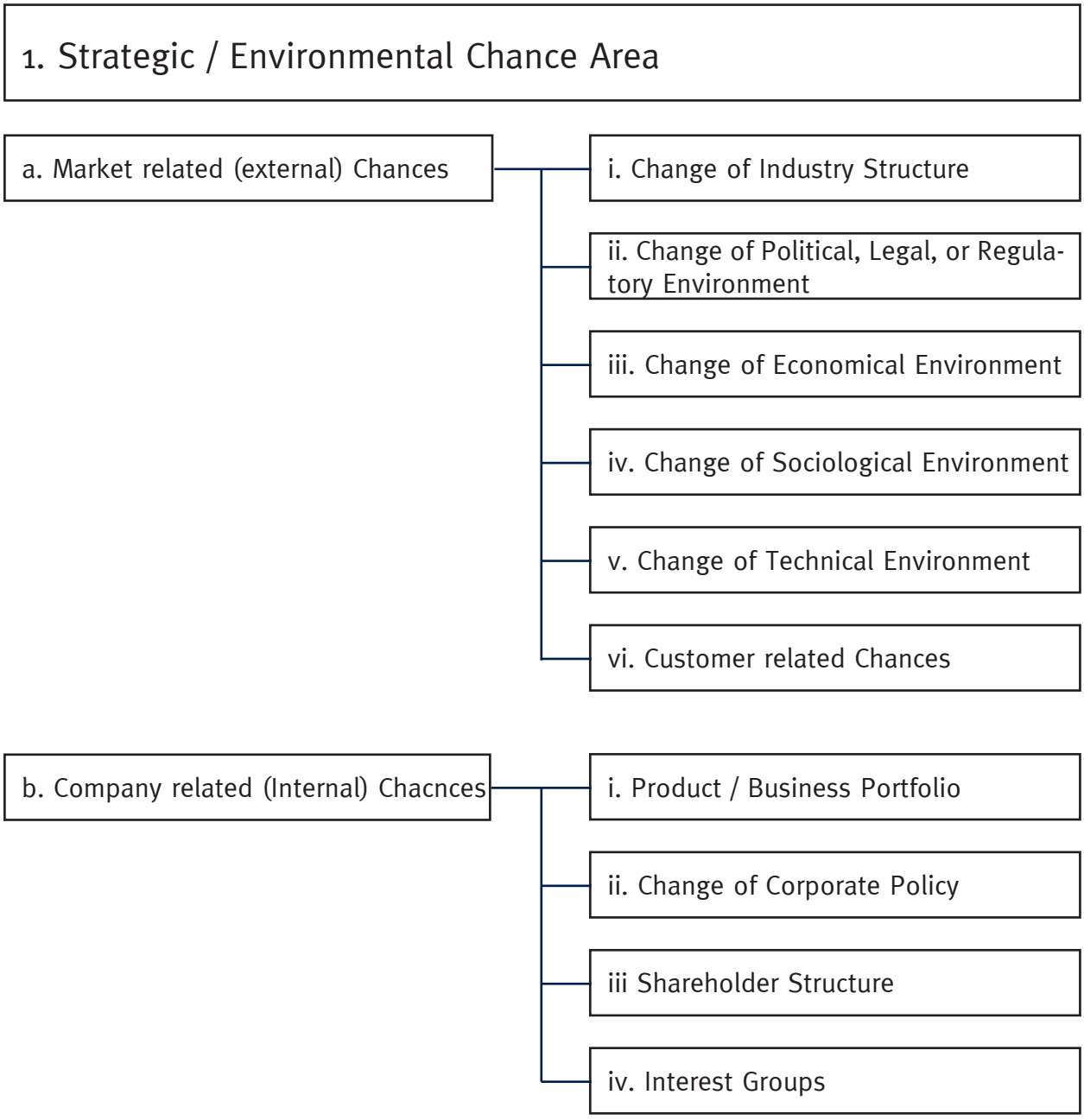
Appendix 2 - Interrelationships amongst C&Os

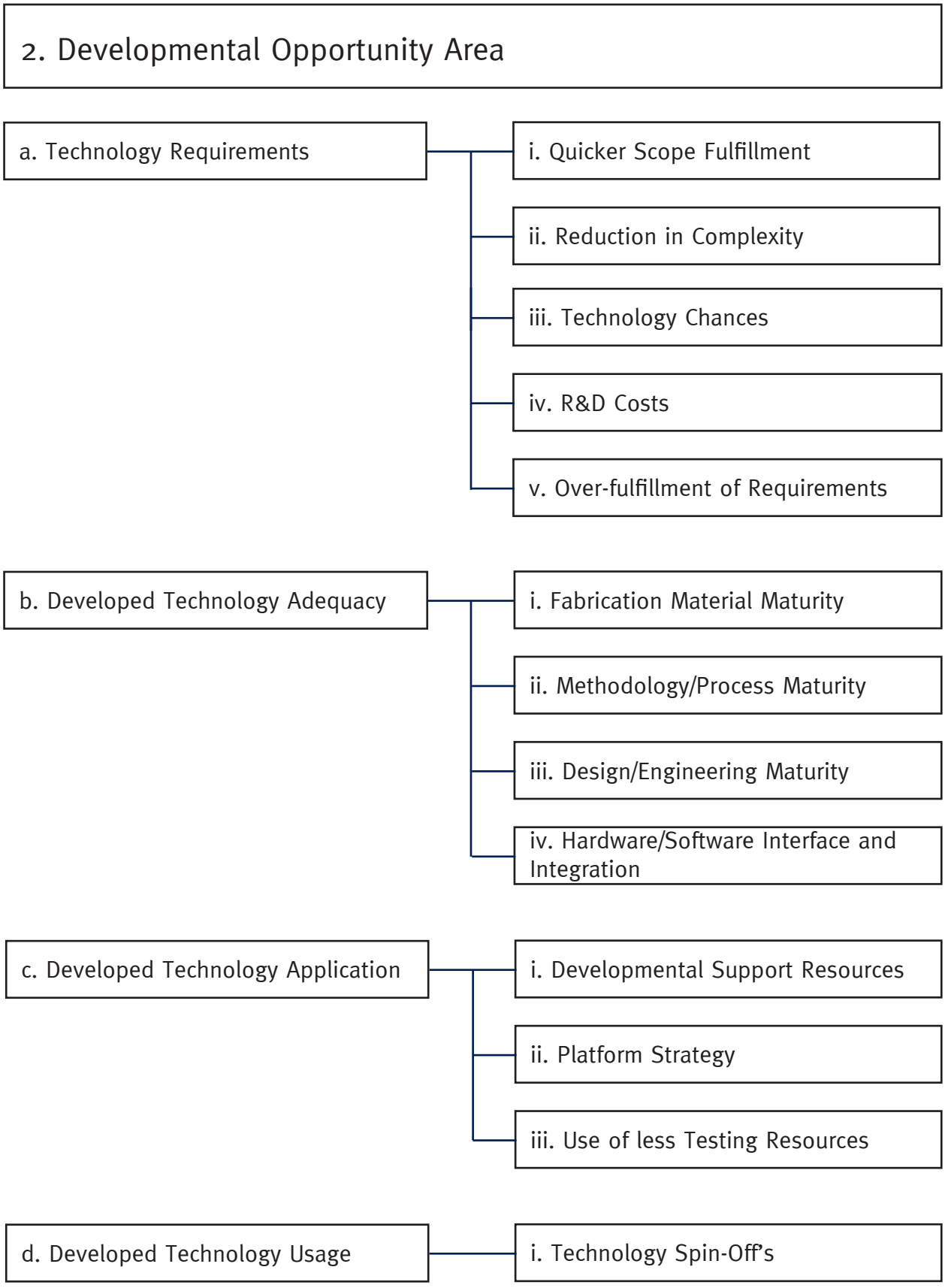
The following illustrates exemplary interrelationships that occur amongst categories within the Opportunity Breakdown Structure. It was developed in cooperation with opportunity management experts of EADS.

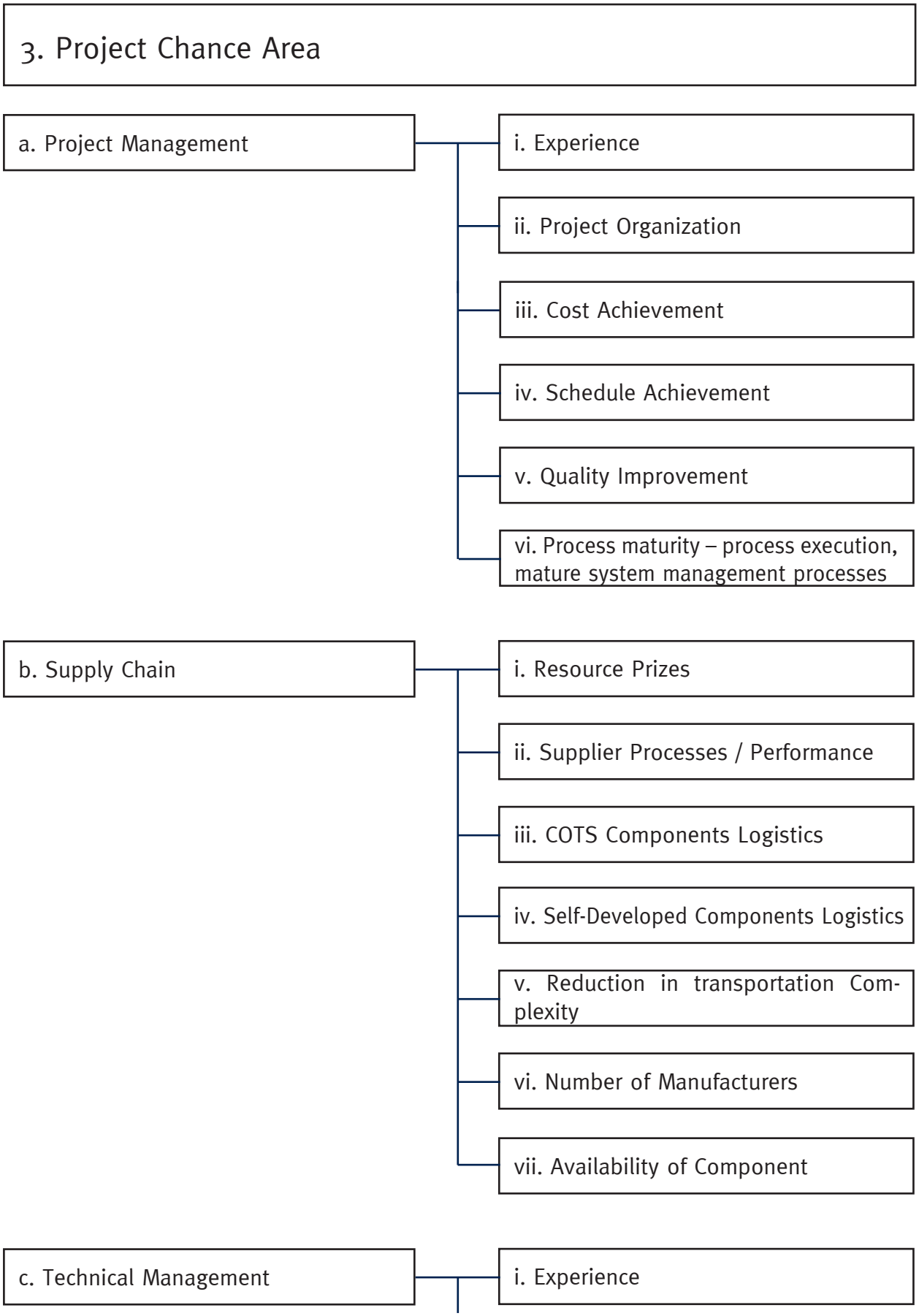


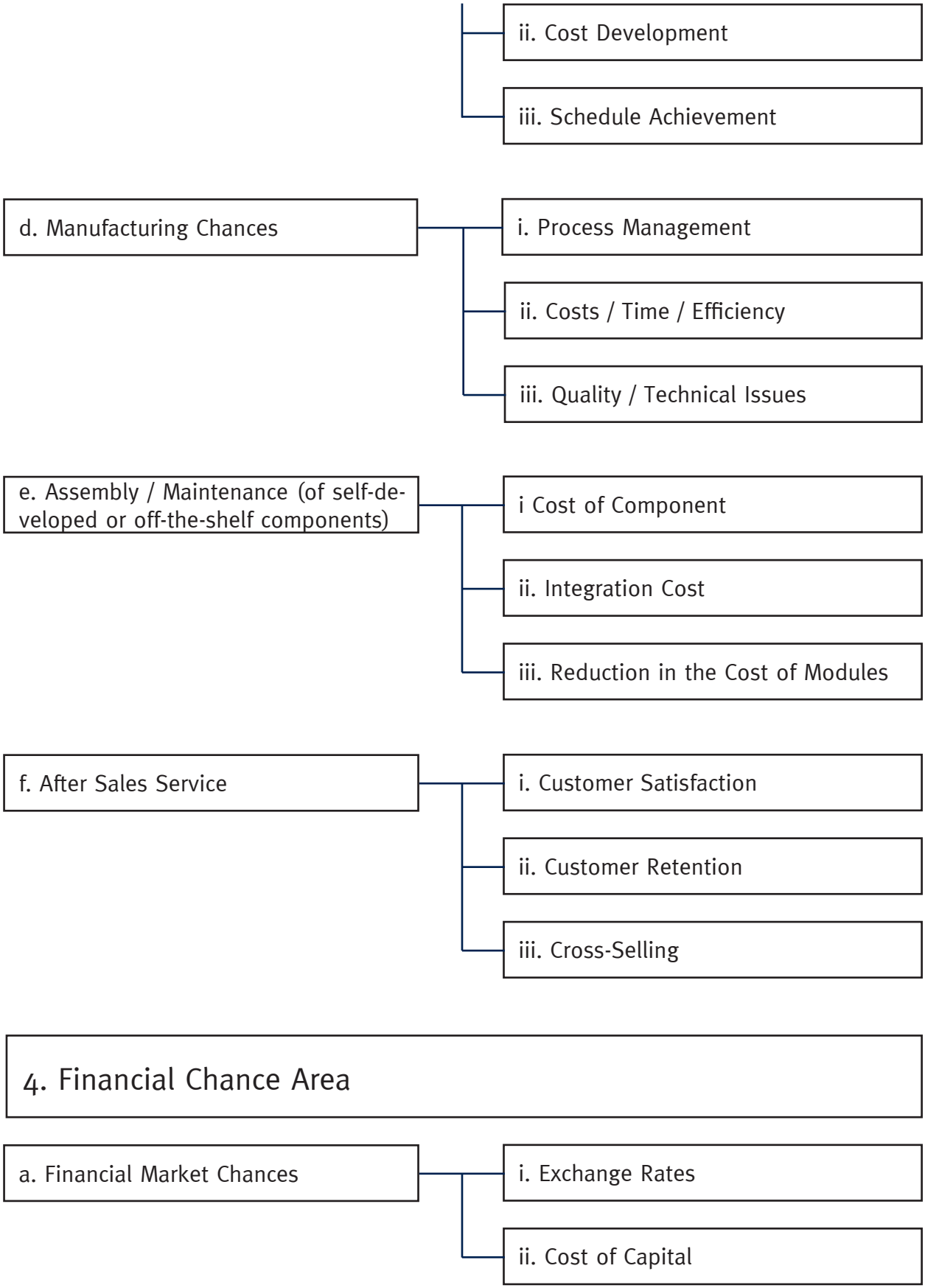
Appendix 3 - Exemplary Version of an OBS

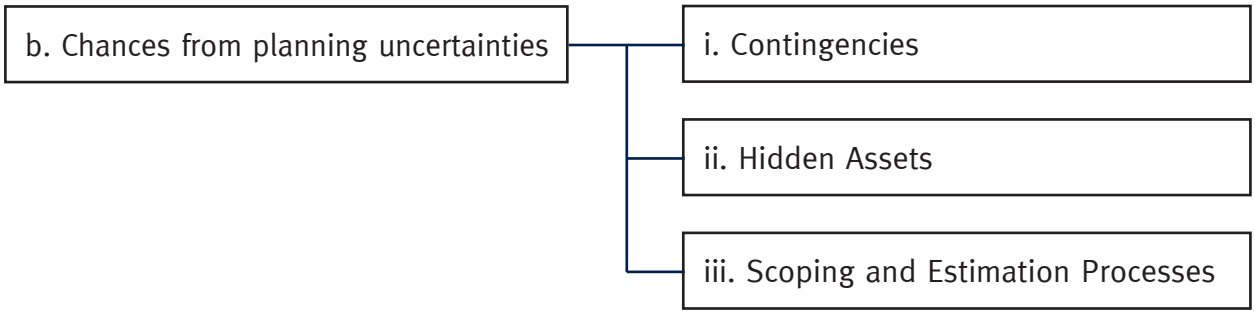
The following shows an exemplary version of an Opportunity Breakdown structure. The five first level rubrics represent the five areas of Porters value chain. The subordinate categories were developed in cooperation with opportunity management experts of EADS. As it was mentioned earlier, this illustration does not represent fixed approach. Rather OM practitioners it should use it as a starting point for the development of individually adapted OBS structures. The second part of appendix 3 provides examples for each of the OBS categories.



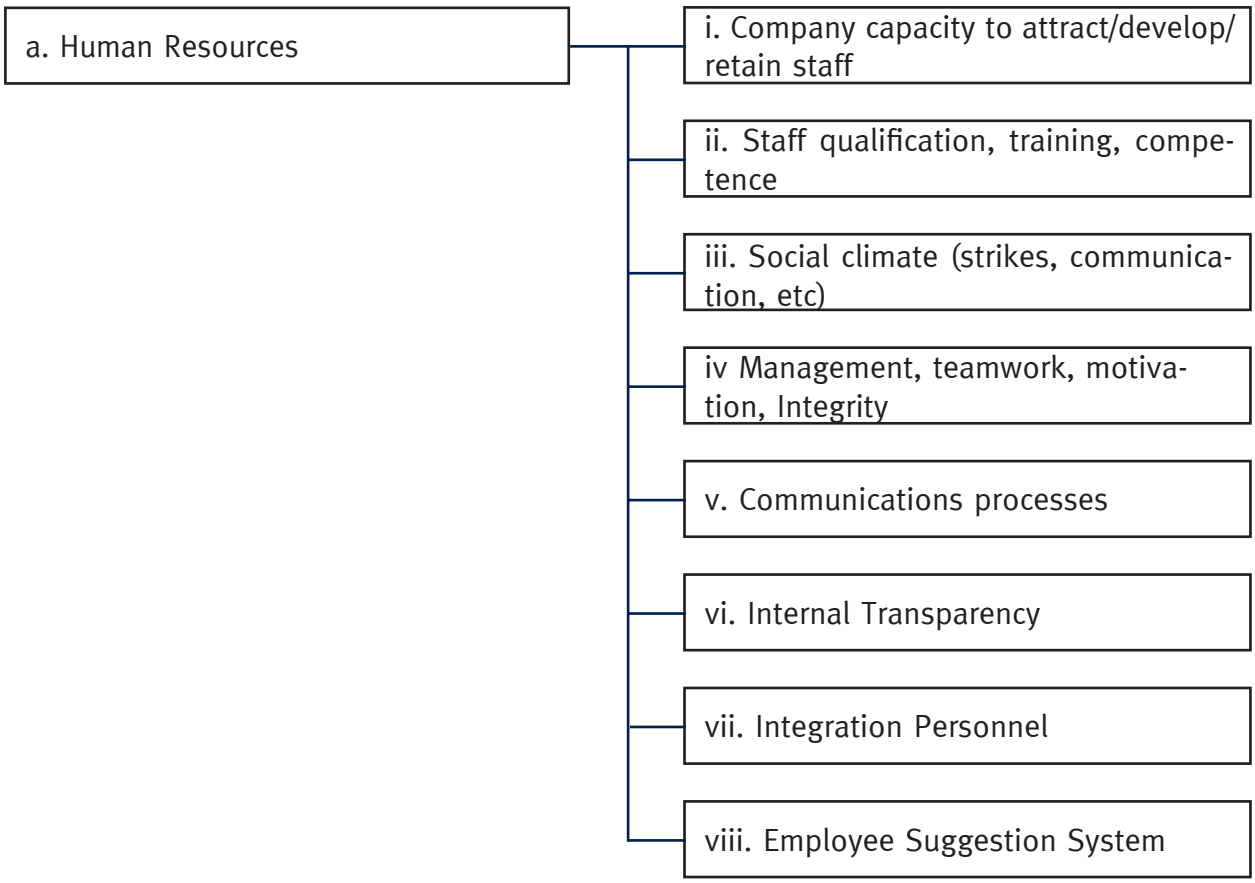

2. Developmental Opportunity Area
a. Technology Requirements
i. Quicker Scope Fulfillment
ii. Reduction in Complexity
iii. Technology Chances
iv. R&D Costs
v. Over-fulfillment of Requirements
b. Developed Technology Adequacy
i. Fabrication Material Maturity
ii. Methodology/Process Maturity
iii. Design/Engineering Maturity
iv. Hardware/Software Interface and Integration
c. Developed Technology Application
i. Developmental Support Resources
ii. Platform Strategy
iii. Use of less Testing Resources
d. Developed Technology Usage
i. Technology Spin-Off's

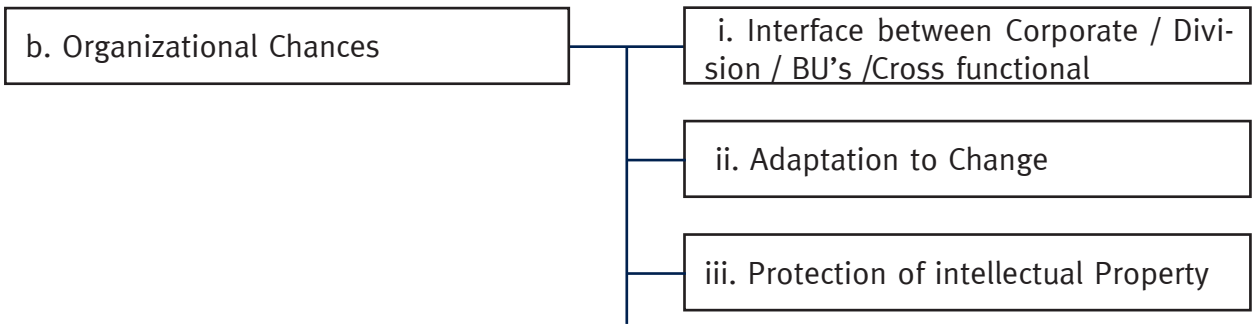

3. Project Chance Area
a. Project Management
i. Experience
ii. Project Organization
iii. Cost Achievement
iv. Schedule Achievement
v. Quality Improvement
vi. Process maturity – process execution, mature system management processes
b. Supply Chain
i. Resource Prizes
ii. Supplier Processes / Performance
iii. COTS Components Logistics
iv. Self-Developed Components Logistics
v. Reduction in transportation Complexity
vi. Number of Manufacturers
vii. Availability of Component
c. Technical Management
i. Experience

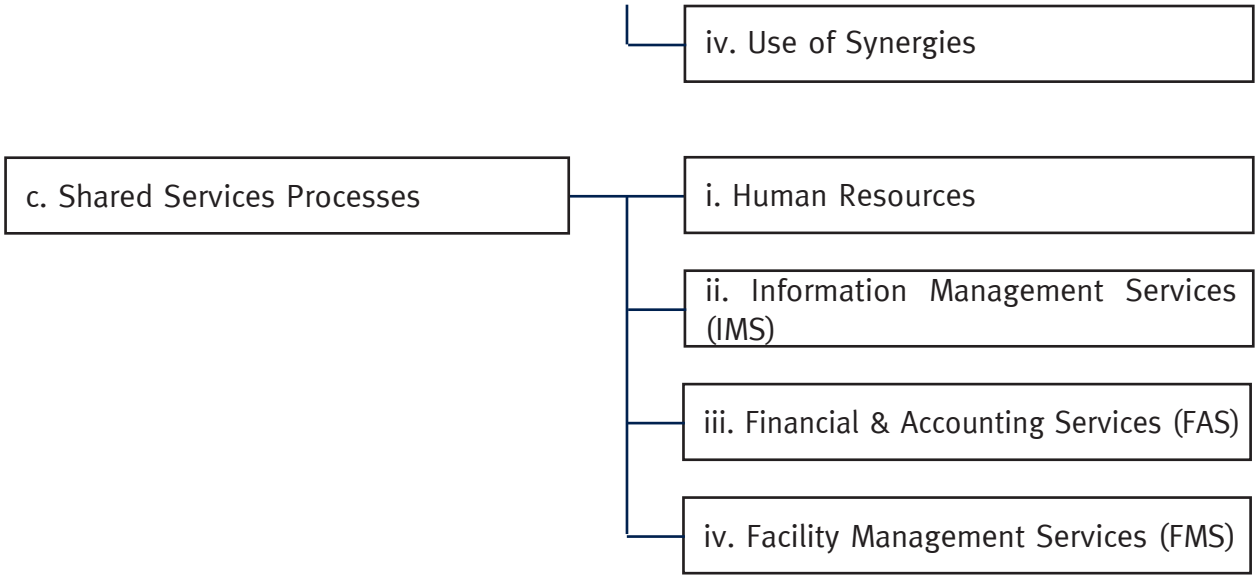

ii. Cost Development
iii. Schedule Achievement
d. Manufacturing Chances
i. Process Management
ii. Costs / Time / Efficiency
iii. Quality / Technical Issues
e. Assembly / Maintenance (of self-developed or off-the-shelf components)
i Cost of Component
ii. Integration Cost
iii. Reduction in the Cost of Modules
f. After Sales Service
i. Customer Satisfaction
ii. Customer Retention
iii. Cross-Selling
4. Financial Chance Area
a. Financial Market Chances
i. Exchange Rates
ii. Cost of Capital



5. HR and Organizational Chance Area







Examples for each of the OBS Categories

1/a/i Change of competitive landscape, suppliers, customers, substitutes, new business due to failure of competitors.

1/a/ii Increased governmental support, subventions, change of industry structure (e.g. due to taxes, or selling restrictions), better production terms, change in labor terms, easing of selling restrictions.

1/a/iii Increase of Demand, Changes in the structure of the world economy that lead to changes in the demand of certain products in certain regions .

1/a/iv Chances in demographic and cultural aspects of the external macroenvironment (birth rate, population growth, age distribution, development of the age structure...)

1/a/v New technology which in combination with corporate stengths might lead to the creation of a chance.

1/a/vi Advancement in interpersonal customer interface relations which leads to an increase in sales, simplification of the customer relations, contractual chances (positive deviation from agreed service range).

1/b/i Offering of a new product/service range.

1/b/ii Positive planning deviation due to beneficial changes in corporate policy.

1/b/iii Beneficial effect on corporate decision making.

1/b/iv Favorable change of company image, positive effects (e.g. on share prices) due to change in stakeholder structure.

2/a/i Positive planning deviations due to quicker scope fulfillment.

2/a/ii Development of an easier solution.

2/a/iii Detection of technological opportunities which positively influence the production of a part or a system.

2/a/iv Quicker and/or cheaper compliance with requirements.

2/a/v Over-fulfillments of requirements in certain systems or modules which positively influences contract compliance.

2/b/i Cost / time savings due to learning-effects (experience) in material usage, development of new materials which enable a cheaper/quicker/more flexible production.

2/b/ii Cost / time savings due to usage of familiar and established processes (e.g. less waste, quicker and more precise setup of machines.

2/b/iii Cost / time savings due to the possibility to transfer engineering/design knowledge/ capabilities.

2/b/iv Cost / time savings due to facilitated interfaces/integration.

2/c/i Positive planning deviations due to straightforward product development.

2/c/ii Cost / time savings due to usage of platform strategies.

2/c/iii Optimization of testing (quicker, cheaper methods).

2/d/i Opportunities of using developed technologies or processes in different products or applications.

3/a/i Internal knowledge transfer, use of synergies.

3/a/ii Improvements in internal (project related) interfaces.

3/a/iii Positive deviation from planned cost (PMO level).

3/a/iv Positive deviation form planned time schedule (PMO level).

3/a/v Higher quality in certain systems or modules which positively influences customer negotiations.

3/a/vi Process improvements (Business support, Scoping, Estimation/Planning, Communication).

3/b/i Increase in margin due to lower cost of resources.

3/b/ii Cost- or time-savings due to an improvement in supplier processes / performance.

3/b/iii Cost savings due to improvements in the logistic process of "off-the-shelf components". Easier integration to better spadework/collaboration of concerned parties.

3/b/iv Cost savings due to improvements in the logistic process of self-developed components.

3/b/v General reductions of external or internal transportation complexity.

3/b/vi Positive effects due to change in number of manufacturers (e.g. supply chain, standardization, better interfaces, easier coordination.

3/b/vii Improvements of order/delivery processes (e.g. JIT solutions)

3/c/i Positive effects due to experienced management (routine, know-how)

3/c/ii Positive deviation from planned cost (CC level).

3/c/iii Positive deviation form planned time schedule (CC level).

3/d/i Change in production processes which leads to an increase in productivity.

3/d/ii Cheaper, quicker, or more efficient production.

3/d/iii Improvement in quality which leads to lower assembly times, or a lower usage of operating supplies.

3/e/i Positive effects due to change in number of manufacturers (e.g. supply chain, standardization, better interfaces, easier coordination.

3/e/ii Improvements of order/delivery processes (e.g. JIT solutions)

3/e/iii Reduction in component cost (e.g. due to different material usage).

3/f/i Positive radiation effects, that could lead to improvements in brand reputation,

and/or the attraction of new customers., and/or additional orders.

3/f/ii Securing of future business.

3/f/iii Generation of additional business (e.g. offering of relative products, or services).

4/a/i Favorable development of exchange rates, which could boost sales in certain regions, increase of margin due to invoicing in foreign currencies.

4/a/ii Positive changes in cost of equity or debt.

4/b/i Remaining parts of planned contingencies, which are to be reported as early as planning deviations become visible.

4/b/ii Discovering/Disclosure of hidden assets which leads to appreciable improvements of the results.

4/b/iii Uncovering of false assumptions, which leads to positive planning deviations in scoping and/or estimation processes.

5/a/i Positive project development due to advancements in overall employee qualification.

5/a/ii Higher than expected qualification level of staff which leads to improvements in project performance.

5/a/iii Positive working climate, open corporate culture which generates an incentive to internal communication.

5/a/iv Improved productivity due to high levels of motivation.

5/a/v Cost / time savings due improvements of the internal knowledge transfer.

5/a/vi Internal knowledge transfer, identification of synergies.

5/a/vii Smooth and supportive integration in new employees which enables a quick and effective start into the company.

5/a/viii Suggestions of employees, which might lead to improvements of costs, time, or quality.

5/b/i Cost / time savings due improvements of interfaces.

5/b/ii Positive planning deviations due to quicker adaptations to organizational changes.

5/b/iii Market opportunities due to capabilities that are protected as intellectual property.

5/b/iv Synergies as organizational brackets.

5/c/i Outsourcing of HRS which leads to easier/cheaper/better acquisition of personnel.

5/c/ii Hard- & Software (adequacy, development, obsolescence), support & Security (virus, data loss, sabotage), network, work environment, training.

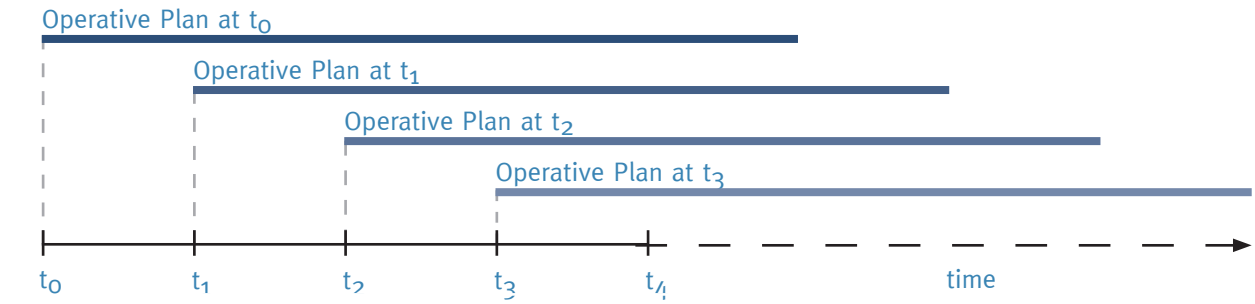
5/c/iii Outsourcing of FAS which leads to easier/cheaper/better support.

5/c/iv Outsourcing of FAS which leads to easier/cheaper/better support.

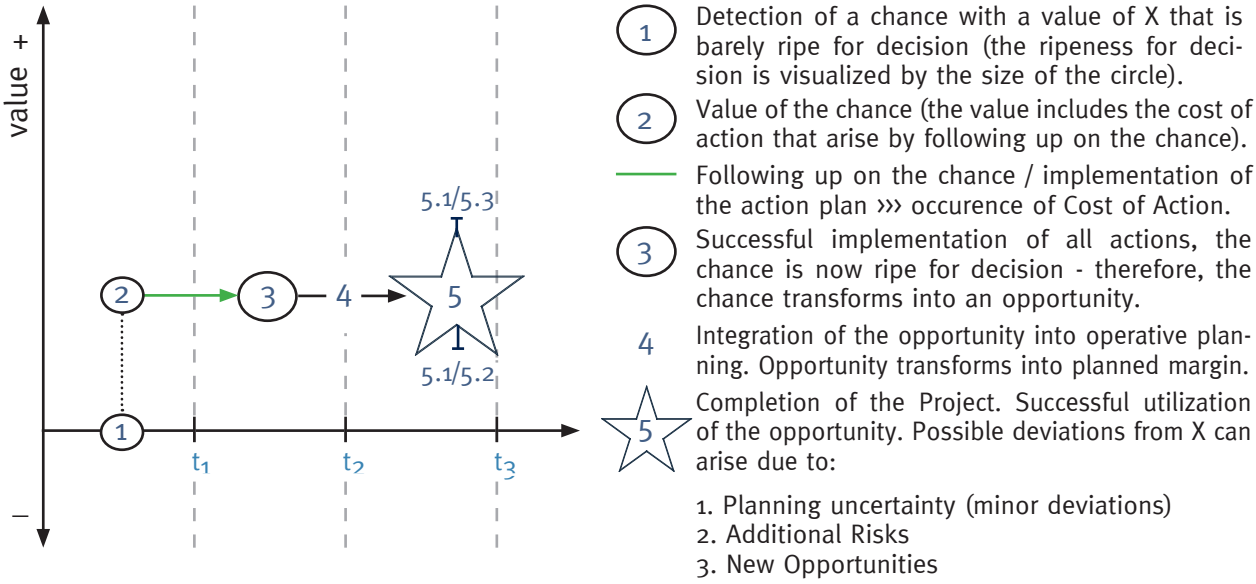
Appendix 4 - Transformation of Chances into Opportunities

The following illustrates the transformation of chances into opportunities and their relation to corporate planning. The figure was created in coopertation with Opportunitiy Management experts of EADS.

Timeframes of the annual operative Planning



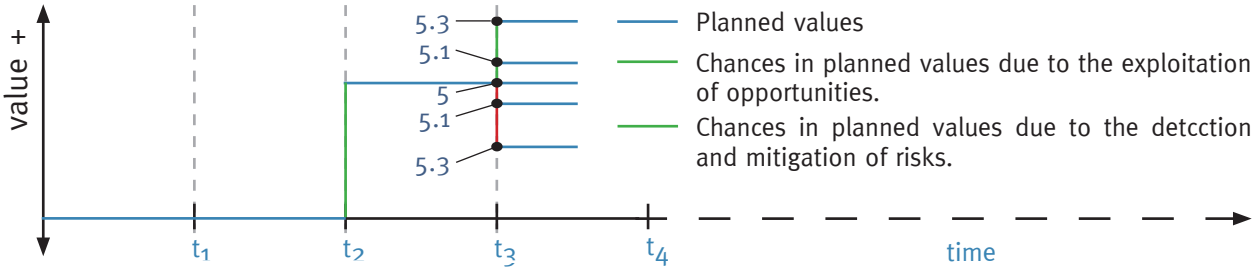
Detection and Handling of possible positive Deviations from Objectives



1. Detection of a chance with a value of X that is barely ripe for decision (the ripeness for decision is visualized by the size of the circle).
2. Value of the chance (the value includes the cost of action that arise by following up on the chance).
3. Following up on the chance / implementation of the action plan ››› occurence of Cost of Action.
4. Successful implementation of all actions, the chance is now ripe for decision - therefore, the chance transforms into an opportunity.
4. Integration of the opportunity into operative planning. Opportunity transforms into planned margin.
5. Completion of the Project. Successful utilization of the opportunity. Possible deviations from X can arise due to:

1. Planning uncertainty (minor deviations)
2. Additional Risks
3. New Opportunities

Intrgration of Opportunities into Operative Planning



Planned values

Chances in planned values due to the exploitation of opportunities.

Chances in planned values due to the detcction and mitigation of risks.

Today we live in a world that is characterized by a constantly changing environment. During the last decade, this highly volatile environment forced companies to implement strategies that identify, track and minimise the risks that entrepreneurial activity entails. Unfortunately, risks only account for a part of the insecurity that is connected to future events. The other and not inferior part of this insecurity consists of possible positive developments - so called opportunities. Due to this reason in economic science and in practice the opinion aggravates that solely focusing on risks is not sufficient to fully exploit the potential of markets and companies. Although this problem is well known in economic science, up to now only little scientific focus was shifted towards the systematic identification and management of opportunities.
With this book, I want to undermine the importance of Opportunity Management for all companies independently of their size or branch that they operate in. Thereby, this book is dedicated to all managers who strive to improve the professionalism of their companies in terms of strategic thinking. Furthermore, I hope that this book can facilitate the implementation of Opportunity Management in practice.

Key Words: Strategic Management, Opportunity Management, Risk Management, Chance Management, Uncertainty Management, Opportunity Breakdown Structure

Philip Junge was born in Villingen-Schwenningen in 1980. He graduated from the HTWG Konstanz as Master of Engineering in 2007. Today he is responsible for Sales Excellence at Infineon Technologies and has a teaching assignment for business administration at the university of applied sciences in Munich.

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