



universität  
wien

# MASTERARBEIT

Titel der Masterarbeit

„Consumer co-creation in the New Product Development  
Process. A study of the European market.“

Verfasserin

Lena Schmatzer

angestrebter akademischer Grad

Master of Science (MSc)

Wien, 2015

Studienkennzahl lt. Studienblatt: A 066 914

Studienrichtung lt. Studienblatt: Masterstudium Internationale Betriebswirtschaft

Betreuerin: ao. Univ.-Prof. Dr. Christine Strauß



*“There are so many creative people, but how can firms utilize their creativity and know-how for new product development?”*

(Co-Creation in New Product Development, as of February 23<sup>rd</sup>, 2015)



## Table of Contents

List of abbreviations .....	IV
List of figures .....	IV
List of tables .....	VI
<b>1 Introduction .....</b>	<b>1</b>
<b>1.1 Theoretical relevance .....</b>	<b>1</b>
<b>1.2 Practical relevance .....</b>	<b>2</b>
<b>1.3 Methodology.....</b>	<b>3</b>
<b>1.4 Approach and Structure of the paper.....</b>	<b>4</b>
<b>2 The role of NPD in the advent of consumer co-creation .....</b>	<b>5</b>
<b>2.1 NPD process .....</b>	<b>5</b>
2.1.1 Eight stages of the NPD process by Kotler .....	5
2.1.2 The Stage-Gate Model by Cooper .....	9
2.1.3 Four stages of the NPD process by Hoyer.....	11
<b>2.2 Relevant types of information for NPD .....</b>	<b>12</b>
<b>2.3 Summary and practical application of the study .....</b>	<b>13</b>
<b>3 Consumer co-creation and all relevant types.....</b>	<b>15</b>
<b>3.1 The prevalence of customer co-creation .....</b>	<b>15</b>
<b>3.2 Definitions of co-creation and delineation of relevant terms .....</b>	<b>16</b>
3.2.1 Consumer co-creation.....	17
3.2.2 Consumer co-creation and Open Innovation.....	19
3.2.3 Four types of customer co-creation .....	20
3.2.4 Co-creation and co-production .....	24
3.2.5 A conceptual framework of consumer co-creation.....	25
<b>3.3 Forms of consumer co-creation relevant for the study .....</b>	<b>29</b>
3.3.1 Consumer co-creation and mass customization .....	30
3.3.2 Consumer co-creation and crowdsourcing .....	31
3.3.3 Consumer co-creation and co-designing .....	33
3.3.4 Degree of consumer involvement .....	35
<b>3.4 Corporations' incentives for consumer co-creation .....</b>	<b>37</b>
3.4.1 Four consumer types .....	38
3.4.2 Incentives for consumer co-creation .....	39
<b>4 Empirical study consumer co-creation .....</b>	<b>43</b>

<b>4.1</b>	<b>Motivation and objective of the study .....</b>	<b>43</b>
<b>4.2</b>	<b>Methodology .....</b>	<b>45</b>
<b>4.3</b>	<b>Data .....</b>	<b>47</b>
<b>4.4</b>	<b>Model .....</b>	<b>49</b>
4.4.1	Country .....	49
4.4.2	Industry .....	51
4.4.3	Concept .....	52
4.4.4	Form of consumer co-creation .....	54
4.4.5	Incentive .....	54
4.4.6	Target group .....	56
4.4.7	Use of the product .....	57
4.4.8	Timeframe .....	58
4.4.9	Stages in the NPD process .....	59
<b>4.5</b>	<b>Results and Discussion .....</b>	<b>62</b>
4.5.1	Industry and concept .....	62
4.5.2	Industry and form .....	63
4.5.3	Industry and incentive .....	65
4.5.4	Industry and target group .....	67
4.5.5	Industry and use of the product .....	68
4.5.6	Industry and timeframe .....	70
4.5.7	Industry and stages in the NPD process .....	71
4.5.8	Concept and industry .....	74
4.5.9	Concept and form .....	75
4.5.10	Concept and incentive .....	76
4.5.11	Concept and target group .....	77
4.5.12	Concept and use of the product .....	78
4.5.13	Concept and timeframe .....	79
4.5.14	Concept and stages in the NPD process .....	80
4.5.15	Form and industry .....	82
4.5.16	Form and concept .....	83
4.5.17	Form and incentive .....	84
4.5.18	Form and target group .....	85
4.5.19	Form and use of the product .....	86
4.5.20	Form and timeframe .....	87
4.5.21	Form and stages in the NPD process .....	88
4.5.22	Stages in the NPD process and industry .....	90

4.5.23	Stages in the NPD process and concept.....	92
4.5.24	Stages in the NPD process and form .....	93
4.5.25	Stages in the NPD process and incentive.....	95
4.5.26	Stages in the NPD process and target group .....	96
4.5.27	Stages in the NPD process and use of the product .....	98
4.5.28	Stages in the NPD process and timeframe.....	100
<b>4.6</b>	<b>Recommendations for action for companies .....</b>	<b>102</b>
4.6.1	What is the company's objective of consumer co-creation activities?....	102
4.6.2	In which industry is the company operating? .....	104
<b>5</b>	<b>Conclusion .....</b>	<b>112</b>
5.1	Theoretical implications .....	112
5.2	Practical implications .....	113
	<b>References.....</b>	<b>115</b>
	Books .....	115
	Papers .....	115
	Internet sources.....	119
	<b>Appendix .....</b>	<b>122</b>
	Appendix I – Summary of different co-creation concepts and definitions.....	122
	Appendix II – Summary of the conducted study .....	124
	Appendix III – Eidesstattliche Erklärung.....	125
	Appendix VI – Abstract (English).....	126
	Appendix V – Abstract (German) .....	127
	Appendix VI – Curriculum Vitae .....	128

## ***List of abbreviations***

B2B	Business-to-business
B2C	Business-to-consumer
NPD	New Product Development
i.e.	id est; (which means)
etc.	etc.

## ***List of figures***

Figure 1: Eight stages of the New Product Development process.....	8
Figure 2: Stage-Gate Model for closed innovation processes .....	10
Figure 3: Stage-Gate Model for open innovation processes .....	11
Figure 4: A comparison of the three relevant models of the NPD process.....	14
Figure 5: Four types of co-creation .....	21
Figure 6: Conceptual framework of consumer co-creation.....	26
Figure 7: Degree of consumer involvement and degree of customer contribution to the NPD process .....	36
Figure 8: Overall sample size before study limitation.....	48
Figure 9: Key criterion “country” distributed among the sample.....	49
Figure 10: Key criterion “industry” distributed among the sample.....	51
Figure 11: Key criterion “concept” distributed among the sample .....	53
Figure 12: Key criterion “form of consumer co-creation” distributed among the sample .	54
Figure 13: Key criterion “incentive” distributed among the sample .....	55
Figure 14: Key criterion “target group” distributed among the sample .....	57
Figure 15: Key criterion “use of the product” distributed among the sample.....	58
Figure 16: Key criterion “timeframe” distributed among the sample .....	58



Figure 17: Key criterion “stages in the NPD process” distributed among the sample .....	61
Figure 18: Analysis of the key criteria industry and concept .....	63
Figure 19: Analysis of the key criteria industry and form .....	64
Figure 20: Analysis of the key criteria industry and incentive .....	66
Figure 21: Analysis of the key criteria industry and target group .....	68
Figure 22: Analysis of the key criteria industry and target group .....	69
Figure 23: Analysis of the key criteria industry and timeframe .....	70
Figure 24: Analysis of the key criteria industry and stages in the NPD process .....	72
Figure 25: Analysis of the key criteria concept and industry .....	74
Figure 26: Analysis of the key criteria concept and form .....	75
Figure 27: Analysis of the key criteria concept and incentive.....	76
Figure 28: Analysis of the key criteria concept and target group .....	77
Figure 29: Analysis of the key criteria concept and use of the product .....	79
Figure 30: Analysis of the key criteria concept and timeframe .....	80
Figure 31: Analysis of the key criteria concept and stages in the NPD process.....	81
Figure 32: Analysis of the key criteria form and industry .....	83
Figure 33: Analysis of the key criteria form and concept .....	84
Figure 34: Analysis of the key criteria form and incentive .....	85
Figure 35: Analysis of the key criteria form and target group .....	86
Figure 36: Analysis of the key criteria form and use of the product .....	87
Figure 37: Analysis of the key criteria form and timeframe .....	88
Figure 38: Analysis of the key criteria form and stages in the NPD process.....	89
Figure 39: Analysis of the key criteria stages in the NPD process and industry .....	91
Figure 40: Analysis of the key criteria stages in the NPD process and concept.....	93
Figure 41: Analysis of the key criteria stages in the NPD process and form.....	94
Figure 42: Analysis of the key criteria stages in the NPD process and incentive.....	95
Figure 43: Analysis of the key criteria stages in the NPD process and target group.....	97

Figure 44: Analysis of the key criteria stages in the NPD process and target group .....	99
Figure 45: Analysis of the key criteria stages in the NPD process and timeframe .....	100
Figure 46: What is the company's objective? A comparison of the concepts .....	103
Figure 47: Recommendations for companies operating in the cosmetics industry .....	105
Figure 48: Recommendations for companies operating in the foods industry .....	107
Figure 49: Recommendations for companies operating in the fashion industry .....	108
Figure 50: Recommendations for companies operating in the lifestyle industry .....	109
Figure 51 Recommendations for companies operating in the technology industry .....	110

## ***List of tables***

Table 1: Consumer incentives .....	42
Table 2: Samples from the United States .....	47
Table 3: Framework of the model for the underlying study .....	50
Table 4: Summary of different co-creation concepts and definitions .....	123
Table 5: Summary of the conducted study.....	124

Ich habe mich bemüht, sämtliche Inhaber der Bildrechte ausfindig zu machen und ihre Zustimmung zur Verwendung der Bilder in dieser Arbeit eingeholt. Sollte dennoch eine Urheberrechtsverletzung bekannt werden, ersuche ich um Meldung bei mir.

# **1 Introduction**

In the first introductory chapter of this master thesis chapter 1.1 presents the current state of research and answers the question of what research gap should be closed with this thesis. Chapter 1.2 demonstrates how companies can benefit of this master thesis in practice. Section 1.3 describes the applied method before section 1.4 of the underlying thesis discusses the approach and structure.

## **1.1 Theoretical relevance**

In recent years, the interest in of consumer co-creation in the NPD process has significantly increased. In contrast to the traditional innovation approach by Schumpeter that says that innovation is the enforcement of novel combinations of production factors. Therefore it is the corporations' responsibility to develop new products and provide them to the customers. (Schumpeter 1911, in Füller 2014, p. 3) The role of consumers in the NPD process has become increasingly more important. The following definition underlines this trend:

“Customer co-creation denotes an active, creative and social collaboration process between producers (retailers) and customers (users), facilitated by the company. “ (Piller et al. 2010, p. 1)

Especially the ending of the definition – “facilitated by the company” – clearly indicates that corporations are eager to benefit in their innovative NPD process from the customers creativity and know-how. This change requires a new way of thinking especially with regard to believe that all people can contribute creative and innovative ideas. (Sanders et al. 2008, p. 9)

Even though this topic does not only become more important for corporations but also for academic literature, research shows that this topic is very young and not well founded in the literature yet. (Hoyer et al. 2010, p. 290) Existing research presents discussions in the field of NPD, consumer co-creation in its various definitions, and analyses of the distinctive forms of co-creation. As a matter of fact, existing literature is concerned with

mostly separate and independent observation of the different factors. Hence, at present there are no research approaches that address the correlation between the various forms of consumer co-creation in the specific stages in the NPD process and deliver input for corporations. Furthermore, for this paper no reference studies have been found. More specifically, no studies that examine and analyze the European market in terms of corporations, which actively use consumers in their innovation process for new product development. This master thesis tries to close this prevailing gap in the scientific literature with a holistic overview. The intention is to shed some light on the different stages of the NPD process, especially those which are relevant for consumer involvement, and the distinctive forms of co-creation activities identified in practice.

## **1.2 Practical relevance**

*“Today, open innovation with customers is booming.”*  
(Piller et al. 2010, p. 22)

This quotation very well demonstrates that consumer co-creation has become a powerful innovative force across a wide variety of industries. Consumer co-creation allows firms to develop products that meet what customers want. Moreover, corporations are able to better react to customers’ volatile preferences and heterogeneous demands. (Ogawa et al. 2006, p. 65)

Studies have shown that companies severely suffer from high failure rates of new product launches to market. Often the failure rates are 50 % or even higher. Most new products do not fail due to technical issues but due to the fact that there is no market for the product. The main reason for this is a wrong understanding of customers’ needs and desires. Even though it has always been known that information about consumer preferences and trends are vital for product development firms couldn’t successfully transfer the gathered information from conventional market research. Consumer co-creation presents a highly promising new way of gathering the required input (i.e. preferences, trends) directly from the customers. By not only asking consumers for their ideas and concepts for new products but also by pursuing and even implementing the best of them, the risk of new product failures can be reduced. (Ogawa et al. 2006, p. 65)

Following the assumption that “consumers are active, one just to have to take advantage of it” (Füller 2014, p. 9) this master thesis aims to develop a model based on the theoretical concepts in order to conduct a study including firms, which integrate consumers into their NPD process. Based on the results from the study, companies will be provided with recommendations for actions, which can be used as guidance with respect to certain framework conditions. These recommendations are not only directed towards companies that already work with consumers but also towards companies that want to rethink and change their innovation process by implementing consumer co-creation.

### **1.3 Methodology**

Basis for this master thesis is a substantiated review and analysis of existing literature, obtained from books, scientific articles and international journals, websites and respective blogs.

A literature review or literature analysis is an essential part of any scientific work. It does not only summarize already existing theories and approaches, but rather creates a solid basis for discovering and closing research gaps, identifying new areas where further research can be done, or simply developing theories based on the existing research. (Webster et al. 2002, p. 13) Hart (1998) provides the following definition of a literature review: “The selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data and evidence written from a particular standpoint to fulfill certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed.” (Hart 1998, p. 13)

In order to being able to review prior literature related to the relevant topics of NPD and consumer co-creation a keyword search around these two terms and multiple variations thereof has been done. Therefore, databases such as ABI/INFORMS, Proquest, EBSCO, ELSEVIER have mainly been used. In fact, in most cases the databases have been accessed via the Vienna University Library. In case one specific book, article or journal was not available there, more detailed research directly in the databases was necessary.

## ***1.4 Approach and Structure of the paper***

This master thesis is based on the increasing importance of consumer co-creation in the NPD process both in practice but also as concerns academic work. More and more companies involve consumers into their product development strategies, exploiting their individual know-how, creativity and product experience. However, many researchers dedicate their work to the role of consumers in the co-creation process, which can be derived from the open innovation concept. The aim of the literature analysis and the research data that is dealt with through ought this master thesis is to raise attention of the importance and the impact consumers can have in the NPD process as well as to how companies benefit from consumer co-creation activities.

Basically, this master thesis comprises of two main parts. On the one hand, with regard to the theoretical relevance, different theoretical approaches and concepts based on prior research are identified and analyzed, which clearly emphasize the increasing importance and main aspects of consumer co-creation. On the other hand, capturing the practical relevance a study has been conducted, which aims to highlight how corporations apply consumer co-creation concepts in their NPD process.

Followed by an analysis of different NPD models and the importance of NPD in the context of consumer co-creation in chapter 2, chapter 3 provides an examination of consumer co-creation and its relevant types and especially focuses on three specific forms of consumer co-creation that are applied in practice. Based on an empirical study chapter 4 presents the model that has been developed for the purpose of the conducted study, discusses the study results and provides recommendations for action for companies. Lastly, chapter 5 closes the master thesis with a conclusion including theoretical- and practical implications.

## ***2 The role of NPD in the advent of consumer co-creation***

In this section of the thesis, a light will be shed on to the New Product Development (NPD) as an important trend and its implications for co-creation.

Traditionally, NPD is one of the key processes in Marketing. According to Kotler (2015), a successful marketing strategy consists of the following six processes: (Kotler Marketing, as of February 21st, 2015; Schmatzer 2014, p.5)

- Identification of opportunities
- New product development
- Customer attraction
- Customer retention
- Loyalty building
- Order fulfillment

Furthermore, the Stage-Gate Model by Cooper (2008) will be briefly displayed and discussed. This theoretical framework evidently outlines the relevance of prevailing changes in NPD models with respect to the development of open innovation in the broadest sense, and more specifically in terms of consumer co-creation, i.e. consumers as external source.

### ***2.1 NPD process***

This chapter will present three different models from three different researchers who dedicated some of their research work to the emerging prevalence of the NPD process.

#### ***2.1.1 Eight stages of the NPD process by Kotler***

Kotler defines the following eight stages that characterize the new product development process: (Kotler et al. 2012, p. 261ff)

#### *2.1.1.1 Idea generation*

Every single NPD process begins with the idea generation, which stands for the systematic search for ideas for new products. New product ideas can be derived from various internal and external sources. Yet, in the context of this paper, customers (external source) will be especially highlighted. Customers can be considered to be the most valuable source, simply because their perspectives with reference to their needs and desires determine the demand. Kotler et al. (2012) suggest the analysis of customers' input (e.g. frequently asked questions, complaints) or to actively ask them to share their new ideas. Another efficient approach in the process of idea generation is crowdsourcing, which is not necessarily limited to customers. (Mladenow et al. 2014, p. 81) However, by integrating customer communities into the new product development process, prominent examples such as Dell Idea Storm or Netflix Prize have proved crowdsourcing to be a very efficient approach. (Kotler et al. 2012, p. 261ff)

#### *2.1.1.2 Idea screening*

After having found numerous ideas during the idea generation process the aim of idea screening is to identify the most qualified ones which the companies shall proceed and further develop. (Kotler et al. 2012, p. 264)

#### *2.1.1.3 Concept development and testing*

The concept development and testing stage aims to turn a promising idea for a new product into a concept before it will be tested with consumers. The concept contains important details and characteristics of the product, of which the understanding as well as the appealing factor is tested with the customers. (Kotler et al. 2012, p. 264f)

#### *2.1.1.4 Marketing strategy development*

The next stage in the NPD process implies the development of a marketing strategy. Usually the marketing strategy denotes three factors:

- a statement considering the target market,
- an outline of the planned marketing budget, price and distribution of the product
- as well as a descriptive part concerning sales, market share, and profit goals.

(Kotler et al. 2012, p. 265f)



#### *2.1.1.5 Business analysis*

Between the evaluation and decision on the product concept, the marketing strategy and the decision whether the product can move on to the next stage (i.e. the product development stage), an in depth business analysis is required. A business analysis aims to find out whether the companies' objectives will be met. Hence, costs, sales and profit forecasts have to be carefully reviewed. (Kotler et al. 2012, p. 266)

#### *2.1.1.6 Product development*

Once having positively passed the business analysis, the product concept goes to the next stage, the product development. Engineers and R&D commonly create a physical product (prototype) based on the product concept that, on the one hand not only meets customers' requirements but exceeds their expectations, and on the other hand, can be easily produced at low costs. Another part of product development is product testing. By consulting customers within the identified target group for product testing, companies can gather highly valuable feedback and input concerning satisfaction and improvement. (Kotler et al. 2012, p. 266f)

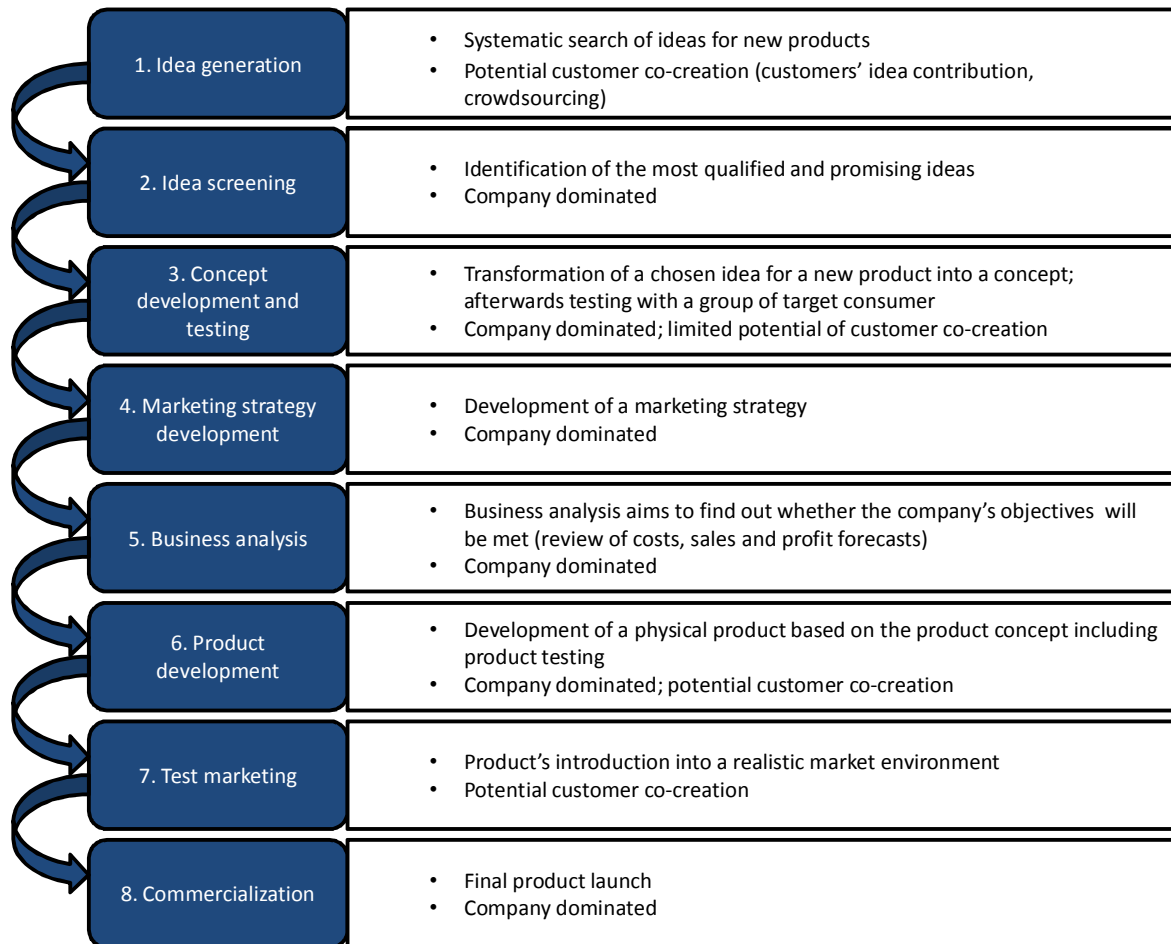
#### *2.1.1.7 Test marketing*

The next stage in the NPD process is test marketing. The prerequisite for that stage is the positive examination of the concept- and product test. Test marketing refers to the product's introduction into a realistic market environment. In case of high risks, major uncertainties, or high investments related to the new product, companies tend to put considerably high effort into test marketing. (Kotler et al. 2012, p. 267f)

#### *2.1.1.8 Commercialization*

In case eventual risks or uncertainties have not proven true the final stage in the NPD process has come – the product launch into a new market, in other words the commercialization of the product. In the course of commercialization two essential aspects must be taken into account. Firstly, the company must decide the timing, and secondly the location (national market, international market, a region or only one single location at the beginning) for the new product launch. (Kotler et al. 2012, p. 268f)

With reference to customer involvement across the NPD process, figure 1 summarizes all stages of the NPD process, as they have been discussed above. Additionally, it highlights all stages with high potential for customer involvement (referred to as “potential customer co-creation”). All others are labeled with “company dominated”. Subsequently, the highest potential of customer involvement has been identified in the following stages of the NPD process:



**Figure 1: Eight stages of the New Product Development process**

Source: own illustration based on Kotler et al. 2012, p. 261ff

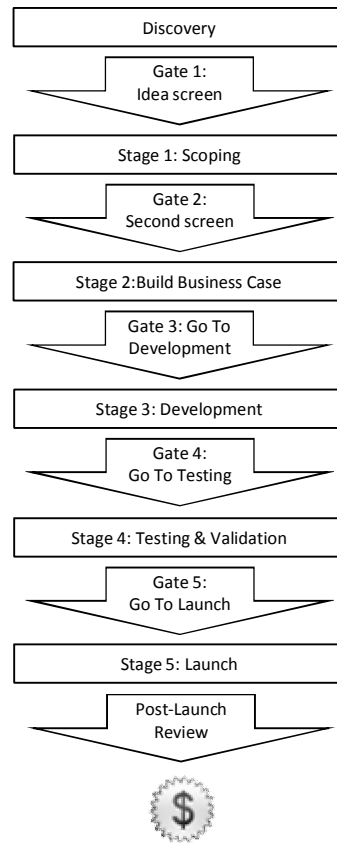
In the first stage, the idea generation stage, customers can directly communicate their ideas to companies. They can either contribute ideas for modification for already existing products, or come up with completely novel product ideas. During the third stage, the concept development and testing stage, companies ask a group of target customers to test the product concepts. Hence, they include customers in their NPD process by asking customers for ideas for further development. In the sixth stage, the product development stage, customers are invited to contribute to the operational product development by

testing the products. The contribution of customers' individual opinions, product use-experience and ideas for improvement and modifications enables them to actively co-create the products during the development process. The seventh stage, the test marketing stage, focuses on the first launch in a realistic setting. During this phase, companies can remove any uncertainties and obstacles and re-estimate the risk involved. Customers are given the opportunity to react and propose modifications and improvements for the last time before the final stage – the commercialization. Obviously, if the customer involvement is high during the previous stages of the NPD process, the risk and uncertainties can be significantly reduced.

### **2.1.2 The Stage-Gate Model by Cooper**

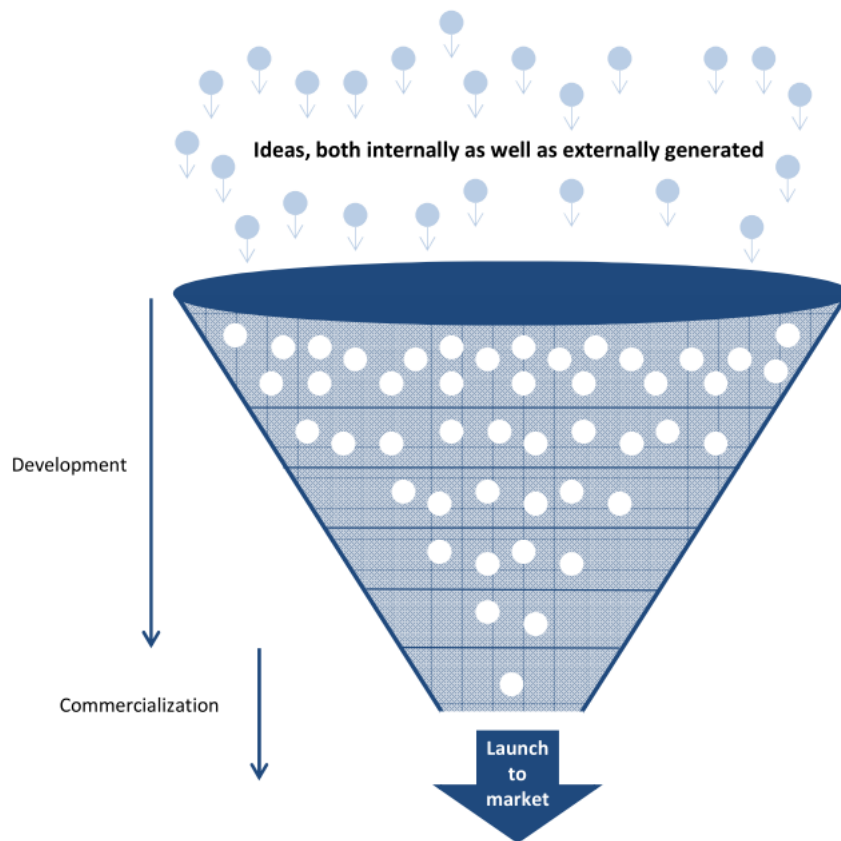
In the context of the NPD process and in addition to Kotler's eight stages of the NPD process, Cooper (2008) developed a model called the stage-gate, which explains the process from gaining an idea to the final launch. This model comprises of six stages (Discovery, Scoping, Build Business Case, Development, Testing & Validation, Launch) and five gates (Idea Screen, Second Screen, Go to Development, Go to Testing, Go to Launch) between the stages (see Figure 2). Each stage is intended to make different decisions based on specific information collected from people of distinctive functional areas in the firm in order to process via the assigned gate to the next stage. (Cooper 2008, p. 214f) Initially, the model was developed for closed innovation processes that are characterized by inputs mainly gathered from internal sources of the firm. However, with the rise of open innovation the stage-gate model has been adapted to the new approach. In this regard corporations increasingly involve external sources (in the scope of the underlying thesis especially with a focus on customers) into the modified NPD stages. These modified stages are accordingly: Ideation of discovery stage, development stage and launch or commercialization stage. (Cooper 2008, p. 231) Thus, the adapted stages with respect to open innovation in the NPD process match Kotler's stages: Idea generation (stage 1), product development (stage 6), and commercialization (stage 8). Interestingly, except for commercialization, which is considered to be company dominated in the model of Kotler, the other stages are in accordance with the assumption of potential customer co-creation. As can be seen in Figure 3, the Stage-Gate model adapted to open innovation is

characterized by numerous ideas that are generated from internal and external sources, which are filtered along the NPD process until the best idea is launched.



**Figure 2: Stage-Gate Model for closed innovation processes**

Source: own illustration based on Cooper 2008, p. 215



**Figure 3: Stage-Gate Model for open innovation processes**

Source: own illustration based on Cooper 2008, p. 231

### 2.1.3 Four stages of the NPD process by Hoyer

Another approach of the NPD process and its different stages is delivered by Hoyer et al. (2010). Pursuant to the conceptual framework (see chapter 3.2.5) they developed four stages containing ideation, product development, commercialization and post-launch actions. (Hoyer et al. 2010, p. 284f) While ideation (i.e. idea generation), product development and commercialization are consistent with stages defined by Kotler (2012) (see chapter 2.1), Hoyer et al. (2010) add post-launch actions, highlighting that especially commercialization and post-launch actions have not been taken into consideration in previous research. Nambisan et al. (2009) refer to commercialization and post-launch actions also as product support activities and clearly point out that customer participation at these stages has become popular und quite common in various industries (e.g. software, video games, automotive). (Nambisan et al. 2009, p. 389f) With special regard to the post-launch stage, consumer co-creation may diminish negative consequences of product failures. (Dong et al. 2008, p. 132) Thus, in contrast to Kotler (2012), Hoyer et al.

(2010) emphasize that consumer co-creation not only applies to the ideation (i.e. idea generation) and product development stage but also identify the stages of commercialization and post-launch activities as highly valuable. (Hoyer et al. 2010, p. 284f)

## ***2.2 Relevant types of information for NPD***

Von Hippel (2005) argues that two types of information are indispensable for successful NPD. On the one hand, information about customer needs and requirements has to be acquired. On the other hand, information including solutions for how to best meet these needs and requirements is needed for successful NPD. Generally, customers provide the most accurate and detailed source for the first type of information, whereas companies display the most accurate and detailed source of the second type of information. This disparity leads to information asymmetry that companies attempted to manage via traditional methods of market research. (von Hippel 2005, p. 8f) As a consequence of the traditional attempts that remain without sustainable success, continuously resulting in dissatisfied consumers, von Hippel (2005) proposes a novel approach, which aims to bridge the information asymmetry, namely customer empowerment. In contrast to the traditional NPD model, where the customers have a passive role and entirely rely on the firms to satisfy their needs, in von Hippel's (2005) approach customers are given a more proactive role in the NPD process by providing them with necessary information and tools that allow them to co-create new products with firms. (O'Hern et al. 2009, p. 86) O'Hern et al. (2009) proclaim that the growth and rapid development of the Internet significantly helped to enable consumers to become an active part in the NPD process. More specifically, the following three aspects are derived. First of all, Internet makes knowledge easier accessible. Secondly, the Internet allows customers to apply their knowledge via access to diverse online design tools. Thirdly, the Internet connects individual customers with proactive communities of like-minded people and enhances collective co-creation. (O'Hern et al. 2009, p. 87f)

### **2.3 Summary and practical application of the study**

A lot of researchers dedicated their work to the importance of new product development in recent years. In general, a product development process requires people from different departments of an organization cooperating with each other. In order to have the prevailing know-how and experience from all respective levels available for the NPD process, an effective communication channel is absolutely indispensable at all stages. (Bradfield et al. 2007, p. 1490; Schmatzer 2014, p. 5)

However, as can be found in the literature, especially eBusiness is predestined to move away from the organizational parties that have traditionally been involved in the NPD process and extend it with a very decisive factor, namely consumers. (Schmatzer 2014, p. 5) This rapidly evolving focus on eBusiness will be confirmed by the study, which represents a significantly high degree of involvement of online interactions (see chapter 4).

This chapter has presented and discussed three different models and approaches about the NPD process. Figure 4 presents a comparison of the three relevant models, which are:

- The eight stages of the NPD process by Kotler (2012)
- The three stages according to the open innovation model by Cooper (2008)
- The four stages implemented in the framework by Hoyer et al. (2010)

As can be seen in figure 4, three stages correspond in all three models. That is the first stage, which refers to idea generation by Kotler (2012) and is also referred to as ideation of discovery by Cooper (2008) and ideation by Hoyer et al. (2010). Furthermore, the sixth stage by Kotler (2012) that is product development corresponds to the second stage by Cooper, which is called development and also to the second stage by Hoyer et al. (2010), which is also referred to as product development. Finally, the eighth stage, which is commercialization by Kotler (2012), corresponds to the third stage by Cooper (2008), which is also referred to as launch or commercialization and also the third stage by Hoyer (2012), also called commercialization.

Kotler (2012)	Cooper – open innovation (2008)	Hoyer et al. (2010)
<b>1) Idea generation</b>	<b>1) Ideation of discovery</b>	<b>1) Ideation</b>
2) Idea screening		
3) Concept development and testing		
4) Marketing strategy development		
5) Business analysis		
<b>6) Product development</b>	<b>2) Development</b>	<b>2) Product development</b>
7) Test marketing		
<b>8) Commercialization</b>	<b>3) Launch or commercialization</b>	<b>3) Commercialization</b>
		4) Post-launch actions

**Figure 4: A comparison of the three relevant models of the NPD process**

Source: own illustration

The practical application of the study will be based on the model of Kotler (2012). That is due to two reasons: Firstly, because the majority of scientific articles used in this thesis invokes this model. Secondly, it is the only model that includes a very important stage for the practical application, namely the stage three, which is the concept development and testing stage. Apart from this, Kotler's model is regarded as the most comprehensive one.



### **3 Consumer co-creation and all relevant types**

*“Customer co-creation is a multifaceted phenomenon.”*  
(Piller et al. 2010, p. 9)

This chapter provides definitions as well as delineation of relevant terms and important underlying concepts, which are essential for the understanding of both the theoretical framework and analysis and the study that has been conducted in the context of this paper. In other words, various concepts that are related to the overall topic of consumer co-creation will be discussed and defined respectively. All concepts were found and identified in both the analysis of the literature as well as during the research and examination of the underlying study.

#### **3.1 The prevalence of customer co-creation**

As far as previous research is concerned, consumer co-creation has mainly been examined in the context of B2B. (Bolton et al. 2009, p. 95; Schmatzer 2014, p. 6) However, regarding the rise of co-creation in the NPD processes, Hoyer et al. (2010) consider the B2C area to be highly attractive and equally challenging. (Hoyer et al. 2010, p. 284; Schmatzer 2014, p. 6) Concerning different aspects between the B2B and B2C markets the following challenges and drawbacks can be identified: In B2C, the distance between consumers and the company is much larger than between firms and firms (B2B). This distance leads to a much larger effort with regard to the consumer integration, which is of decisive character in order to enable the customers to contribute to the new product development. However, the B2C area includes the customer who is the one who knows best what is wanted and needed, and has not been offered yet. (Hoyer et al. 2010, p. 284; Schmatzer 2014, p. 6) Especially the higher distance from companies to customers and the resulting difficulties in integrating them in the product development process can be a partial explanation for the higher failure rates of new products. (Stevens et al. 2003, p. 17)

According to HYVE, an innovation company focusing on consumer co-creation, consumers come up with ideas for new products ranging from highly technological solutions to

tremendously creative and absolutely novel products. Thus, they emphasize that consumer co-creation must be considered as an especially valuable source of input in the B2C area and accordingly to the companies' NPD processes. (Co-Creation in New Product Development, as of February 23<sup>rd</sup>, 2015)

Chesbrough (2011) highlights how companies can gain a greater competitive advantage and an overall superior value through consumer co-creation. Especially, he highlights the prevailing discrepancies between the products and services offered by the companies and the offerings (i.e. products and services) needed and desired by the customers. Furthermore, he points out that this is closely related to the experience both parties (i.e. customers and companies) have. More specifically, regarding experience he also refers to tacit knowledge, which is hard to record and pass on. Hence, he argues that tacit information cannot only be better managed but also significantly increase the firms' competitive advantage by integrating the customers into the NPD process. Additionally, co-creation is considered to be a very effective way in terms of relationship building with customers, which also represents a valuable advantage over the competition. (Chesbrough 2011, p. 53ff)

Another aspect that will be dealt with throughout chapter 3.2 is customer co-creation as a phenomenon with multiple facets. (Piller et al. 2012, p. 12) In order to make the numerous distinctive research approaches more transparent and comprehensible, the following chapter will provide a literature analysis structuring the multiple facets and concepts according to authors who dedicated a significant share of their research work to the topic of consumer co-creation and related concepts.

### ***3.2 Definitions of co-creation and delineation of relevant terms***

Researchers suggest a great variety of definitions in connection with consumer co-creation. The most important ones for the context of this paper are: Henry Chesbrough, Michael Etgar, Wayne D. Hoyer, Robert F. Lusch, Susumu Ogawa, Matthew S. O'Hern and Aric Rindfleisch, Frank Piller, C. K. Prahalad and Venkat Ramaswamy, Elizabeth B.-N. Sanders, Jenny van Doorn, Stephen L. Vargo, and Eric von Hippel. Since this term is very

broadly outlined it can lead to a lot of different contexts and accordingly, might leave a considerable interpretation framework behind.

In the analysis of the literature and especially in the implementation of the study it was clearly visible that there is no all-encompassing definition of consumer co-creation that can be used as the basis of the underlying study. In order to put all study samples (organizations that apply consumer co-creation in their new product development process) into a suitable framework, an unambiguous and comprehensible distinction of all relevant terms is necessary. By defining all interconnected terms, which refer to the typology of consumer co-creation, the broadly used word will be split up into all its types and relevant concepts. In other words, a light will be shed onto all terms and concepts that are not only closely related but can also be considered as part or type of consumer co-creation.

### **3.2.1 Consumer co-creation**

The beginning of co-creation has been identified beyond 2000, when customers took over more active roles and thereby became co-creators. Until then, customers were seen as passive audience. Prahalad et al. (2000) find the most distinguishing aspect is that customers have become “a new source of competence” (Prahalad et al. 2000, p. 80) with the emergence of co-creation. Customers cannot only contribute their individual knowledge and skills, but they are also willing to actively engage in a dialogue with the firms to enhance the NPD process. (Prahalad et al. 2000, p. 80)

The rise of consumer co-creation in the e-Business sector is strongly attributed to the book “The Future of Competition: Co-Creating Unique Value with Customers.” by C. K. Prahalad and Venkat Ramaswamy. Prahalad et al. (2004a) specify that co-creation has started with the role of consumers that has changed in today’s globalized world. Three decisive characteristics are leading this change. First of all, consumers are no longer segregated but are connected to numerous networks. Secondly, they are no longer uninformed but well informed and thirdly, they are no longer uninvolved but become actively involved in the business system. (Prahalad et al. 2004a, p. 2) Consequently, this

allows consumers who want to interact in the new product development process to take a more proactive role. (Prahalad et al. 2004a, p. 4f)

More general, Prahalad et al. (2004b) claim that the traditional, company-centric approach, which is characterized by having the product development solely inside the firm, must be challenged in order to examine the co-creation approach, in which both companies and consumers have new converging roles. (Prahalad et al. 2004b, p. 7) Pursuant to this, they suggest a co-creation concept including the following criteria that define co-creation: (Prahalad et al. 2004b, p. 8)

- Co-creation is a collective process in the new product development between companies and customers.
- Co-creation allows the customers to individually co-create products according to their experiences and perspectives.
- Co-creation is about jointly defining and solving issues.
- Co-creation provides an experience platform that invites customers to actively communicate and develop personalized products and applications.
- Co-creation presupposes a well established communication channel and constant dialogue.
- Co-creation is about implementing and realizing individually tailored experiences.
- Co-creation is about the innovation of experimental environment in order to co-create new experiences.

Furthermore, Prahalad et al. (2004b) clearly point out that co-creation does neither include the customization of products nor outsource specific actions to customers. Co-creation is rather essential considering the direct individual interaction between the company and consumers. Through these interactions, companies can gain critical knowledge and information about customers' expectations and needs. By implementing the customer experiences and developments, companies can shape their products according to what consumers exactly want. (Prahalad et al. 2004b, p. 10f)

Piller et al. (2010) use the term customer co-creation in order to describe relevant strategies with reference to the customers' role in open innovation (in this paper also referred to as NPD process). (Piller et al. 2010, p. 4) According to them, customer co-

creation denotes “an active, creative and social process, based on collaboration between producers (retailers) and customers (users)” (Piller et al. 2010, p. 9). More specifically, firms involve customers who take an active part in the design of new product development. Importantly, the co-created contributions take place in a framework of interaction between the company and the customers that is strongly empowered by the corporations. (Piller et al. 2010, p. 8)

Research often includes the lead user concept as a form of consumer co-creation. However, in the context of this paper the understanding of consumer co-creation agrees with the one from Piller et al. (2010) saying that customer co-creation is derived and based on a firm-driven strategy. While companies only discover and screen ideas developed by the customers in case of the lead user concept, co-creation (including all relevant concepts and types discussed in this paper) requires the provision of necessary tools and systems by the firm. In other words, firms are responsible for the overall organization of the NPD process as well as for the development of a concept including an infrastructure that allows customer to actively contribute in the NPD process. Therefore, lead users are deliberately excluded from the types of consumer co-creation. Instead, lead users are outlined in chapter 3.3.1 as one of the four specific types of consumers who are suitable to get involved in consumer co-creation processes. (Piller et al. 2010, p. 8ff)

Methods that encompass co-creation activities are e.g. user idea contests, platforms for consumer opinions, user innovation toolkits, mass customization, and consumer co-creation communities. (Piller et al. 2010, p. 9)

### **3.2.2 Consumer co-creation and Open Innovation**

Chesbrough (2011) identifies consumer co-creation as an elementary concept that strongly enhances open innovation. (Chesbrough 2001, p. 29)

Generally, open innovation is opposed to the traditional or closed innovation. Typically, in closed innovation companies only use ideas, which are internally created in specifically provided research laboratories. (Chesbrough 2003, in Piller et al. 2010) In contrast, open innovation uses both internal and external ideas. Furthermore, in open innovation the

research and development process is seen as an open system that allows ideas to be generated either within the corporations' boundaries or outside the corporation. (Chesbrough 2006, p. 2)

Another definition of open innovation is delivered by Piller et al. (2010) by saying that open innovation is a process that leverages innovative input for the NPD process, based on formal and informal relationships, obtained by foreign actors and sources outside the firm's boundaries. (Piller et al. 2010, p. 3)

Based on the general observations by Laursen et al. (2006) companies seldom innovate alone. Therefore, the focus moves from the closed innovation process towards an open innovation process including an interactive network consisting of firms, customers and other actors. (Laursen et al. 2006, p. 132) This approach is also supported by Chesbrough (2006) who states that open innovation significantly stood out especially in terms of the dynamic globalized world. (Chesbrough 2006, p. 3)

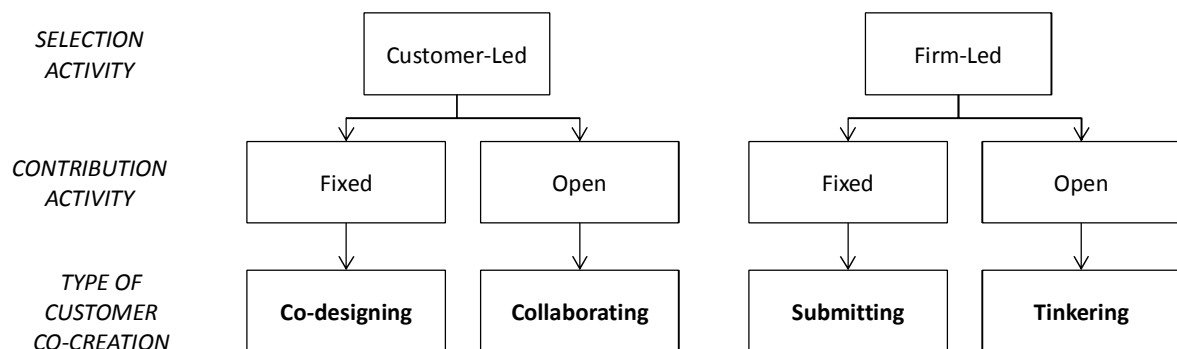
The strongly formative concept of open innovation can be summarized best by one of the initial definitions, namely: "Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively." (Chesbrough 2006, p. 2)

Thus, founded on the definitions of the open innovation concept, it can be concluded that consumer co-creation basically arose with the development of open innovation.

### **3.2.3 Four types of customer co-creation**

O'Hern and Rindfleisch (2009) define four types of co-creation in their paper "Customer co-creation: A typology and research agenda". These four types are derived from literature analysis and are dominated by the fact that co-creation activities vary regarding the degree the customers that are autonomously involved in the NPD process. Furthermore, the four types of co-creation build upon the theoretical approach that customers can be empowered and involved either in the contribution of new ideas, in the selection of new ideas or in both. Notably, contribution activities can be either fixed or

open, and selection activities can be customer-led or firm-led (see figure 5). (O'Hern et al. 2009, p. 89)



**Figure 5: Four types of co-creation**

Source: own illustration based on O'Hern et al. 2009, p. 90

### 3.2.3.1 Collaborating

Collaborating is the one form of co-creation that has the highest degree of customers' involvement. It allows the customers to develop new products and integrate ideas into already existing products. O'Hern et al. (2009) suggest that the concept of collaborating is most applicable to complex applications with high information content. Referring to this, the authors very well exemplify collaborating on the basis of open source software (e.g. Apache, Firefox, Linux) but also consider the field of biotechnology, pharmaceutical products and medical devices to be relevant. Notably, collaborators are characterized by intrinsic motivation and the fact that they profoundly enjoy co-creating products. Their contribution is strongly driven by the conviction that the ideas developed are important and will add value to the product. Overall, collaborating gives consumers significant freedom to contribute their individual ideas, in a self dependent manner and externally from the firm, in order to alter products according to their personal value and needs. The most important advantages for companies can be seen in reduced development costs as well as a process of continuous product improvement. The protection of intellectual property and the attraction of a critical mass of people collaborating can be challenging. (O'Hern et al. 2009, p. 91ff)

### 3.2.3.2 *Tinkering*

Tinkering refers to the customers' modification of already existing products. Even though tinkering has a similarly high degree of latitude for the customers as collaborating, the firm withholds a higher level of control when it comes to choosing customers' contribution. However, the contribution activity is open in both types – Tinkering and Collaborating. According to O'Hern et al. (2009) tinkering occurs most in the computer game industry, where it makes up for a substantial share in the product development process. (O'Hern et al. 2009, p. 93ff) Prahalad et al. (2004) even affirm that computer games heavily depend on consumers' active co-creation. (Prahalad et al. 2004, p. 10) Due to the limited access to products information, tinkerers are restricted in the range of modifications and also the selection activity is firm-led. Furthermore, tinkering represents a tool for product differentiation and clearly increases customer satisfaction by giving the users the possibility to modify according to their needs. Nevertheless, a drawback to this concept is that expert knowledge for both the product and the underlying technology are prerequisite to modifications. (O'Hern et al. 2009, p. 93ff)

### 3.2.3.3 *Co-designing*

The co-designing process consists of two groups of customers. On the one hand, customers who contribute a new design to the firm (representing a smaller group with higher design skills), and on the other hand, customers who choose which design the company should undertake (representing a larger group with lower design skills). Even though co-designing applies to various product categories (among others domestic products, sport equipment) O'Hern et al. (2009) emphasize the example Threadless. Customers can design new products online, publish them on the website, where the most appealing designs are then evaluated and rated by the community. The community's selection serves as a decisive basis for the products the company will offer. Usually co-designing firms limit the customers' design contribution to a fixed framework (format, tools etc.) that set the conditions clear. Yet, the customers enjoy absolute freedom in the selection process. The most significant advantage co-designing has for companies is the fact that the product development costs are noticeably decreased since the design process of new products is outsourced to customers. Also, due to the strong position of



customers in the product development process the risk of product failure is tremendously reduced. However, co-designing companies run the risk of having the business model imitated and as a consequence fierce competition of new entrants. (O'Hern et al. 2009, p. 95f)

#### *3.2.3.4 Submitting*

Submitting is the concept of directly proposing new product ideas to companies. Hereby the sole submission of an idea is not sufficient. Rather customers must present an idea in a well-translated concept including illustrative examples and prototypes. These conceptual ideas build the basis for companies regarding the decisions which ideas should be followed (further developing, testing and in best case launching). One of the most popular firms working with submitting is among others P&G, with their program called "connect & develop"<sup>1</sup>. In comparison to contributing, tinkering and co-designing, submitting has the lowest level of customer freedom in both the contribution and the selection (selection activity is firm-led, contribution-activity is fixed). In spite of the similarity to co-designing, submitting differs severely in the selection process that is exclusively conducted and controlled by the firm. Most notably, customers are given a vital role in the NPD process by being able to share their knowledge and creative novel ideas in a direct way with companies. Yet, it often occurs that the company retains the legal title to the product development idea, not the submitter. One of the biggest advantages the concept of submitting has for companies is the fact that the product development cycle is dramatically reduced. Moreover, new products are enriched by end-users novel ideas and individual needs. However, a downside can be seen in the loose relation between customers and companies, which results in reduced intrinsic motivation. (O'Hern et al. 2009, p. 96f)

Additionally, O'Hern et al. (2009) present a more global definition, which provides evidence for the prevailing communication network (i.e. e-mail, social networks, websites, blogs, etc.) that encourages consumers to take an active role in the new product development process. Hence, from this perspective, co-creation can be seen as

---

<sup>1</sup> <http://www.pgconnectdevelop.com>, as of February 16<sup>th</sup>, 2015

“a collaborative NPD activity in which customers actively contribute and/or select the content of a new product offering”. (O’Hern et al. 2009, p. 86, Hoyer et al. 2010, p. 283)

### **3.2.4 Co-creation and co-production**

Vargo et al. (2004) put a strong research focus on service-dominant logic, which basically means that firms learn from collaborations with their customers. Moreover, they can adapt these findings to the customers’ dynamic and personal needs. Thus, according to Vargo et al. (2004) a service-dominant logic entails that customers not only define value but also, and more precisely spoken, co-create with companies. (Vargo et al. 2004, p. 6)

Lusch et al. (2006) distinguish between co-creation and co-production. On the one hand, co-creation means that the customer creates and determines value during the consumption process and usage of a certain product (also defined as value-in-use). On the other hand, co-production “(...) involves the participation in the creation of the core offering itself. It can occur through shared inventiveness, co-design, or shared production of related goods, and can occur with customers and any other partners in the value network.” (Lusch et al. 2006, p. 284)

Also, Etgar (2008) takes a conceptual delimitation between co-creation and co-production as a basis for his research in the field of consumer engagement. In general, he agrees with Lush and Vargo by saying that co-production implies all activities that occur within the actual production process, which includes designing, collecting resources etc. Etgar also claims that it can be related to customization (see chapter 3.3.1). (Etgar 2008, p. 98) At this point, it should be indicated that the design process has been identified as an independent sub-form of the co-creation process. Therefore it will be discussed in a separate section (see chapter 3.3.3).

Explanatory, both terms have repeatedly been the subject of research by Lusch and Vargo (Lusch et al. 2006, Vargo et al. 2004, 2008). Yet, it should be noted that the term co-creators (2008) has evolved from co-producers (2004). While they stated in a research paper in 2004 (Vargo et al. 2004, p. 7, 10) that customers are always co-producers, they modified and extended this view by saying that customers are always co-creators (Vargo et al. 2008, p. 7f).

### **3.2.5 A conceptual framework of consumer co-creation**

In spite of the pre-existing research, Hoyer et al. assert in their paper “Consumer cocreation in New Product Development” (2010) that consumer co-creation is still in its early stage and suggest that a lot of further research is required. This underlying article is considered to be a standard research work about consumer co-creation associated with new product development. In other words, Hoyer et al. (2010) declare that consumer co-creation is especially critical with regard to the new product development process. Hence, they cover important aspects and definitions that help understand the concept of consumer co-creation. (Schmatzer 2014, p. 5)

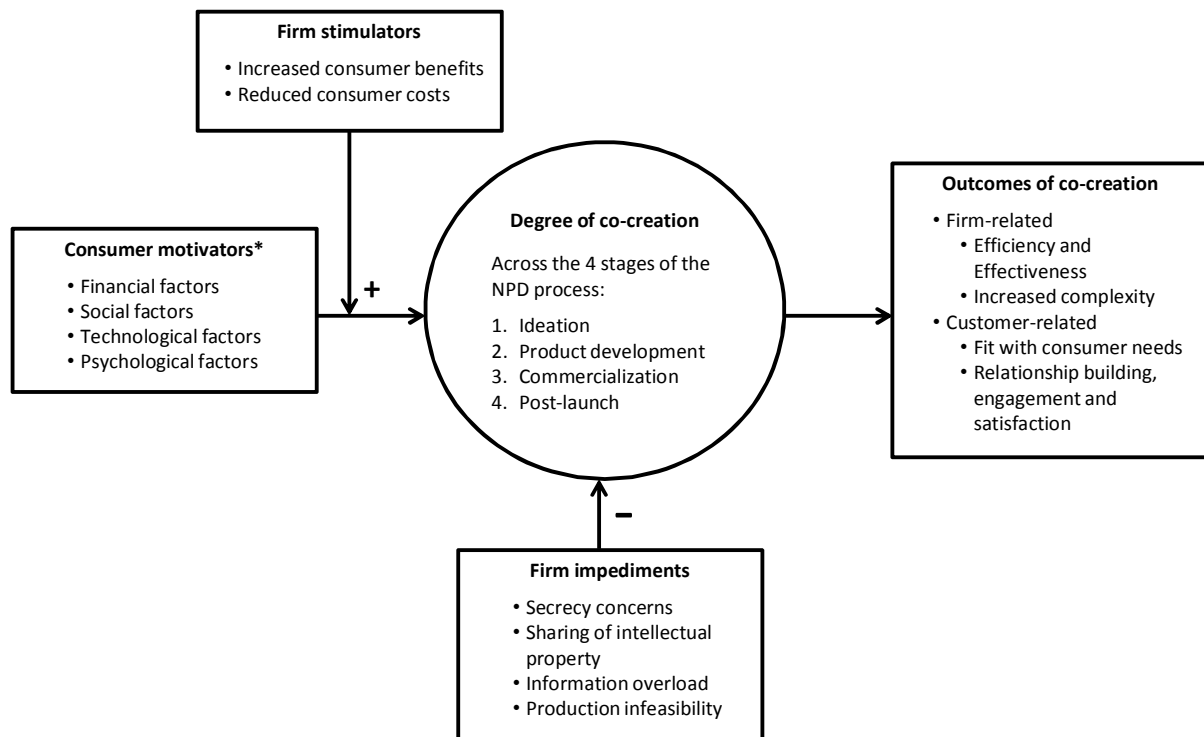
Hoyer et al. (2010) define co-creation as the result of a considerably augmented consumer power. In this regard, they point out the concept of consumer “empowerment” that is a formative aspect in the concept of consumer co-creation and NPD. “Empowerment” connotes the changing role of consumers in terms of their desire to actively contribute new ideas to the new product development and thus create value in exchange with firms. (Hoyer et al. 2010, p. 283) They incorporate the definition by van Doorn et al. (2010) who emphasize the relevance of the customer engagement behavior approach, which analyses the relation between customers and the company focusing on the behavioral aspect. (Schmatzer 2014, p. 6) Van Doorn et al. (2010) conceive that “customer engagement behaviors go beyond transactions, and may be specifically defined as a customer’s behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers.” (van Doorn et al. 2010, p. 254)

Hoyer et al. (2010) criticize that studies that exist on co-creation often neglect NPD as an important factor and also represent a limited view, since most studies and research has been tailored to individual specific cases. Thus, the authors created a conceptual framework that serves a more global and comprehensive understanding of consumer co-creation that very well presents consumer co-creation specifically in the context of NPD. (Hoyer et al. 2010, p. 284)

As already mentioned above, Hoyer et al. (2010) established a framework of consumer co-creation that contains all related aspects that play a decisive role in the context of consumer co-creation specifically in the NPD process. (Hoyer et al. 2010, p. 284)

Following, a general idea of the model will be given, as well as all incorporated specific topics will be discussed.

The *degree of co-creation* constitutes the core of the model, which includes on the one hand the scope and on the other hand the intensity of co-creation activities across and within all product development stages. In contrast to Kotler (2012) who defines eight stages of the new product development process, Hoyer et al. (2010) use only four stages containing ideation, product development, commercialization and post-launch actions. (Hoyer et al. 2010, p. 284f) (see chapter 2.3)



\* In this paper referred to as consumer incentives  
(from the company's perspective)

**Figure 6: Conceptual framework of consumer co-creation**

Source: own illustration based on Hoyer et al. 2010, p. 284

As has already been discussed more detailed in chapter 2.3, Hoyer et al. (2010) consider four stages of the NPD process. Those are: ideation, product development, commercialization and post-launch. They particularly highlight that commercialization as well as post-launch have been neglected in previous research.

The scope of co-creation refers to the extent to which corporations collaborate with their customers across product development stages. Subsequently, firms reach the highest scope when they engage in customer co-creation across all four stages. The intensity of co-creation refers to the extent to which consumers engage in the product development within a specific stage. Hence, firms have the highest degree of their intensity when the development for new products is exclusively done by the customers in a respective stage. (Hoyer et al. 2010, p. 288)

The *consumer motivators* are driven by financial-, social-, technological- and psychological incentives. (Hoyer et al. 2010, p. 290) Since the focus of this paper lies on the corporations' perspective, consumer motivators will be transferred to this perspective and subsequently referred to as customer incentives. Incentives in the context of consumer co-creation are a crucial aspect for the underlying study (see chapter 3.4.2). Therefore, a deeper analysis is provided in chapter 3.4, which is dedicated to discuss both all relevant types of consumers who engage in consumer co-creation as well as all kind of incentives for consumer co-creation.

The conceptual framework by Hoyer et al. (2010) also considers firm impediments and stimulators. Generally, *firm stimulators* refer to the benefits and costs that are related to consumer co-creation activities. On the one hand, firms can acquire more consumers by increasing the benefits that can be received from the participation in the co-creation process. Hoyer et al. (2010) claim that a mix of financial-, social-, technological- and psychological incentives is most effective. On the other hand, firms can stimulate the co-creation by reducing the costs that occur in case of contributing in the co-creation process. (Hoyer et al. 2010, p. 290; Schmatzer et al. 2014, p. 7)

*Firm impediments* are characterized by the following four aspects: (Hoyer et al. 2010, p. 289) First of all, in order to accomplish the best effect of consumer co-creation, consumers must be granted access to information in a transparent manner. Traditionally, firms were keen on not releasing any information outside of the firm. Even more, they took advantage of the existing information asymmetry between firms and customers. (Prahalad et al. 2004b, p. 9) Hoyer et al. (2010) refer to this also as concerns about secrecy. (Hoyer et al. 2010, p. 289; Schmatzer 2014, p. 7) Secondly, the ownership of intellectual property may present concerns. While the company draws on the rights over

the ownership of intellectual property, it may as well occur that the consumer expect the retention of ownership of intellectual property. (Hoyer et al. 2010, p. 289; Schmatzer 2014, p. 7) Thirdly, firms face the risk of an enormous information overload by receiving an extensively large amount of consumers' ideas during the ideation stage. Therefore, the evaluation process presents an extremely complex challenge for the company. (Hoyer et al. 2010, p. 289; Schmatzer 2014, p. 7) Yet, in contrast to Kotler et al. (2012) who traditionally define the idea screening level to be dominated by the company, more and more firms integrate consumers in the selection process. (Hoyer et al. 2010, p. 289) Based on the conducted study (see chapter 4), it was found that companies, which realize their co-creation projects via platforms such as unserAller<sup>2</sup> or jovoto<sup>3</sup> do actively integrate consumers in the selection process. Lastly, firms run the risk of production feasibility. This means that it might happen that a firm invests a lot into the development of a novel idea, which in the end cannot be produced and put into practice. (Hoyer et al. 2010, p. 289f; Schmatzer 2014, p. 8)

The final part of the conceptual framework by Hoyer et al. (2010) discusses the *outcomes of co-creation* highlighting both challenges and benefits. Co-creation can positively impact the competitive situation in two respects: higher effectiveness and improved efficiency. While higher effectiveness refers to an increased product value through innovativeness, and subsequently products that better meet customers' expectations and needs, improved efficiency refers to increased productivity and resulting cost reduction. Hoyer et al. (2010) summarize diverse sources for potential cost savings proposed by various researchers: outsourcing of NPD activities, which leads to a decreased need of traditional market research, reduced inventory costs as well as minimized risk of failure of the products. (Hoyer et al. 2010, p. 292) Considering the gain in effectiveness through co-created products, the most striking advantage can be seen in the fact that consumers design the new products according to their particular needs. Thereby, products not only become more effective but even more importantly the quality is perceived higher. Finally, firms benefit from the intense exchange of information in social networks and communities where customers are able to build relationships with peers as well as with the corporations be it product-related or personal ones. (Hoyer et al. 2010, p. 192;

---

<sup>2</sup> <https://unseraller.de/>, as of February 16<sup>th</sup>, 2015

<sup>3</sup> <http://www.jovoto.com/>, as of February 16<sup>th</sup>, 2015

Schmatzer 2014, p. 11) Even though corporations can significantly benefit from consumer co-creation in the NPD process there are also challenges and drawbacks. To name the most prominent one: firms have reduced control over strategic management and planning. (Hoyer et al. 2010, p. 293; Schmatzer 2014, p. 11) By passing on control to customers traditional power structures are abandoned. Often it is difficult for those people who have successfully worked in the traditional NPD process (closed innovation approach) to adapt to the new distribution of control. (Sanders et al. 2008, p. 9) Also it becomes more difficult to follow the set company's objectives. Considering that open NPD processes normally start without a clearly defined and known outcome one of the major challenges is to steer the project into an undefined direction. Especially the diversity of engaged people, the differing interests and varying perspectives of all parties involved present a considerable challenge to the success of open innovation. (Albinsson et al. 2007, p. 982) Yet, apart from management tasks, which become progressively more complex, the idea screening stage (i.e. process of choosing the best ideas contributed by consumers) includes considerable challenges due to the enormous amount of submitted ideas and concepts. (Hoyer et al. 2010, p. 293; Schmatzer 2014, p. 11)

### ***3.3 Forms of consumer co-creation relevant for the study***

In practice, many enterprises claim that they use consumer co-creation for their NPD process. However, after a closer and more detailed examination it becomes obvious, that many applied approaches can be assigned to a concept that is subordinate to consumer co-creation. With regard to the conducted study (see chapter 4) the following three main forms have been identified to be most applicable:

- Mass customization
- Crowdsourcing
- Co-designing

Following, this chapter will describe each of the relevant forms as a basis for the underlying study.

### **3.3.1 Consumer co-creation and mass customization**

Frank T. Piller who wrote his postdoctoral thesis about “Innovation and Value Co-Creation” in 2004, has published numerous papers dealing with co-creation and related topics since then. More specifically, Piller writes extensively about the consumer co-creation and the impact on companies. Having this in mind, Piller is considered to be an expert on the concept of mass customization. (Sanders et al. 2008, p. 8) Thus, this chapter deals especially with mass customization as a form of co-creation but also mentions other terms and concepts that are subject to Piller’s research.

The overall objective of mass customization is to serve customers with products meeting their individual needs and preferences. Yet, the aspect that comes with the efficiency of mass production is still in the focus. (Berger et al. 2005, p. 1)

Following this argument, the concept of mass customization is seen as a relevant aspect in the context of consumer co-creation in the NPD process. Mass customization aims to have customers’ co-design products according to their individual needs and preferences with the help of a configuration system. After having finished the interactive process, the personalized products will be fashioned on demand. (Ogawa et al. 2006, p. 67) Mass customization is characterized by companies providing a product and most importantly options to customize. Hence, the customers are seen as co-designers of the product development process. In contrast to collective customer commitment the products are individually ordered, manufactured on-demand and respectively custom-distributed in case of mass customization. (Ogawa et al. 2006, p. 68)

Based on the supposition that consumers can help companies to significantly decrease the risk of product failure, Ogawa et al. (2006) talk about “collective customer commitment”. (Ogawa et al. 2006, p. 65) Collective customer commitment is characterized by customers who develop new product designs. Often the respective customer group has relevant expertise and experience. The initial product design will then be evaluated and eventually elaborated by the respective manufacturer and a customer community before it will be mass-produced and mass-distributed. Collective customer commitment is especially efficient to apply if products shall be developed for a fairly small and heterogeneous market or if highly innovative products shall be tested due



to a lack of consumer experience and traditional market research. (Ogawa et al. 2006, p. 68)

Scholars' opinions are divided concerning the question whether mass customization is a form of consumer co-creation or not. Many scholars, such as von Hippel (1986, 2006), O'Hern and Rindfleisch (2009), Prahalad et al. (2004b) exclude it from the concept and definition of co-creation arguing that the degree of customers' contribution in the NPD process is not sufficient. (O'Hern et al. 2009, p. 102) Due to the practical relevance, which has been especially identified on the basis of the underlying study (see chapter 4), mass customization is explicitly included as a form of consumer co-creation in this paper. By doing this, the theoretical approaches by Piller et al. (2003) and Wind et al. (2001) are consulted and used. Wind et al. (2001) propose the term of "customerization", which reflects the companies' ambition to improve their relationship with their consumers. Similar, but still slightly extended they define customerization as "built-to-order mass customization process" that is not only initiated by the customers but also controlled during the whole process (Wind et al. 2001, p. 15) Hence, with reference to the relationship between firms and their customers, the latter ones become "active co-producers" in the concept of customerization. (Wind et al. 2001, p. 20) Since the overall objective of the customerization remains fairly equal to the one of mass customization, namely to give customers the possibility to co-design their individualized products that best fit their personal expectations and needs, within the scope of this thesis it is referred to as mass customization. Nevertheless, it is considered that there exists a further conceptual development in this area. An additional reason for including mass customization as a co-creation form is the minimization of risks, in terms of creating products that meet customers' needs and current trends. As a result, mass customization is seen as a valuable contribution to the corporations' NPD processes. (Ogawa et al. 2006, p. 67)

### **3.3.2 Consumer co-creation and crowdsourcing**

For many practical applications the concept of crowdsourcing is especially relevant in connection with all kinds of collaborative activities, such as open innovation and consumer co-creation. (Estellés-Arolas et al. 2012, p. 189) The concept of crowdsourcing

has been coined by Jeff Howe and Mark Robinson who first introduced the term in 2006. (Brabham 2008, p. 76)

Estellés-Arolas et al. (2012) created a definition, which encompasses all aspects covering any kind of crowdsourcing. The definition has been derived from the most substantial definitions provided by prominent researchers in this respective field. (Estellés-Arolas et al. 2012, p. 198)

“Crowdsourcing is a type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task. The undertaking of the task, of variable complexity and modularity, and in which the crowd should participate bringing their work, money, knowledge and/or experience, always entails mutual benefit. The user will receive the satisfaction of a given type of need, be it economic, social recognition, self-esteem, or the development of individual skills, while the crowdsourcer will obtain and utilize to their advantage what the user has brought to the venture, whose form will depend on the type of activity undertaken.” (Estellés-Arolas et al. 2012, p. 197)

Due to the integration of the whole bandwidth of aspects that have been identified, a broad definition of the term crowdsourcing evolved. However, the underlying definition will be specified according to the context of consumer co-creation in order to have a more precise and applicable definition of the term.

Generally, crowdsourcing can be seen as an increasing factor on the companies' performance by having access to external ideas and know-how. (Pénin et al. 2011, p. 247) Brabham (2008) refines the concept of crowdsourcing by focusing on the corporations' objective of crowdsourcing, as he describes it as “a strategic model to attract an interested, motivated crowd of individuals capable of providing solutions superior in quality and quantity to those that even traditional forms of business can” (Brabham 2008, p. 79). Howe (2006a) further emphasizes that crowdsourcing implies the companies obligation of producing or realizing the design in mass quantity and sell it. (Howe 2006a, as of March 19<sup>th</sup>, 2015) Most evident at the level of consumer co-creation is that crowdsourcing is closely related to collaborative work and the active integration of consumers and users into the NPD process. Therefore, the corporations' intention is the

exploitation of consumers' creativity, novel ideas and knowledge. (Kleemann et al. 2008, p. 22) However, Howe (2006b) clarifies that crowdsourcing does not necessarily have to begin internally; rather it can already start with the users and the customers. (Howe 2006b, as of March 19<sup>th</sup>, 2015) This characteristic also very well matches the facet of consumer contribution during the first stage of the NPD process, namely the idea generation.

### **3.3.3 Consumer co-creation and co-designing**

Globally speaking, co-designing is an approach that makes customers constructive contributors in the product development process. (Albinsson et al. 2007, p. 980) According to Steen et al. (2011) co-designing records a significant gain in importance in various industries and corporations. (Steen et al. 2011, p. 53) In addition to O'Hern et al. (2009) who define co-designing as one of their four types of consumer co-creation (see chapter 3.2.3.3), the concept will be further supported by theoretical analysis.

Sanders et al. (2008) claim that co-designing, which is described as an approach of collective creativity, is not a new phenomenon at all. In fact, it dates back to the 1970s when it was referred to as participatory design approach where users are seen as partners. Taking this as a basis, the idea of co-creation and co-designing emerged. It is emphasized that both terms co-creation as well as co-designing are often used simultaneously and consequently confuse. (Sanders et al. 2008, p. 7) According to Steen et al. (2011) co-designing has become a so-called buzz word, which led to the fact that it is often wrongly used. (Steen et al. 2011, p. 53)

Co-creation is an extensively and broadly used term comprising of all kinds of collective creativity. Prerequisite for co-creation is a creative process that includes contribution from at least two people, usually many more. In contrast, co-design is used in a more narrow sense, namely as a particular facet of co-creation within the entire NPD process. Co-design is characterized as a creative and collective process, in which customers design products in close collaboration with each other. Essential is that the people (i.e. customers) involved in the co-designing process are no professional designers in the proper sense. (Sanders et al. 2008, p. 6) An additional interpretation of the term co-designing is delivered by Steen et al. (2011) who argue that the role of experts is

significantly important in the interplay between customers. Thus, they base their central work on co-designing as a creative cooperation between experts (i.e. professional designers, developers) and customers, who are in this case experts in the sense of their individual experience. (Steen et al. 2011, p. 53)

Another term that has been identified as a primary objective in the context of co-designing is network innovation. Network innovation can be best described as an innovation that is established by a network consisting of both customers and organizations. (Albinsson et al. 2007, p. 977)

Berger et al. (2005) use the terms mass customization and customer co-designing synonymously. Generally, they consider both equally used concepts to be a highly promising approach to serve customers efficiently and individually. (Berger et al. 2005, p. 1)

They refer to co-designing in the following ways. Firstly, they define co-designing as a “process that allows customers to express their product requirements and carry out product realization processes by mapping the requirements into the physical domain of the product” (Berger et al. 2005, p. 2). Secondly, “the organizational arrangement (...) where customers and manufacturers perform their interaction collaboratively has to be jointly developed and operated (co-designed) by the actors on the supply side, namely manufacturers and retailers (...)” (Berger et al. 2005, p. 2f).

In order to illustrate the vague distinction of the terms, especially the difference between theory and practical application, the example of miAdidas shall be briefly accentuated. When talking about the miAdidas program where customers can pro-actively perform the design activity according to their personalized needs and specifications (not only in terms of design, but also in terms of features and fit) within the NPD process, Berger and Piller (2003) refer to co-designing. (Berger et al. 2003, p. 42f, Piller et al. 2003, p. 10) As Berger et al. (2003) explain, the miAdidas concept presupposes all respective information of the customer. Hence, a direct contact between the customer and the company is decisive during the product development process. (Berger et al. 2003, p. 42f.) The authors further mention that the integration of the customers into the product development process allows the company to benefit from identifying and fast reacting to changing market trends. Through the involved open innovation approach companies no longer have to

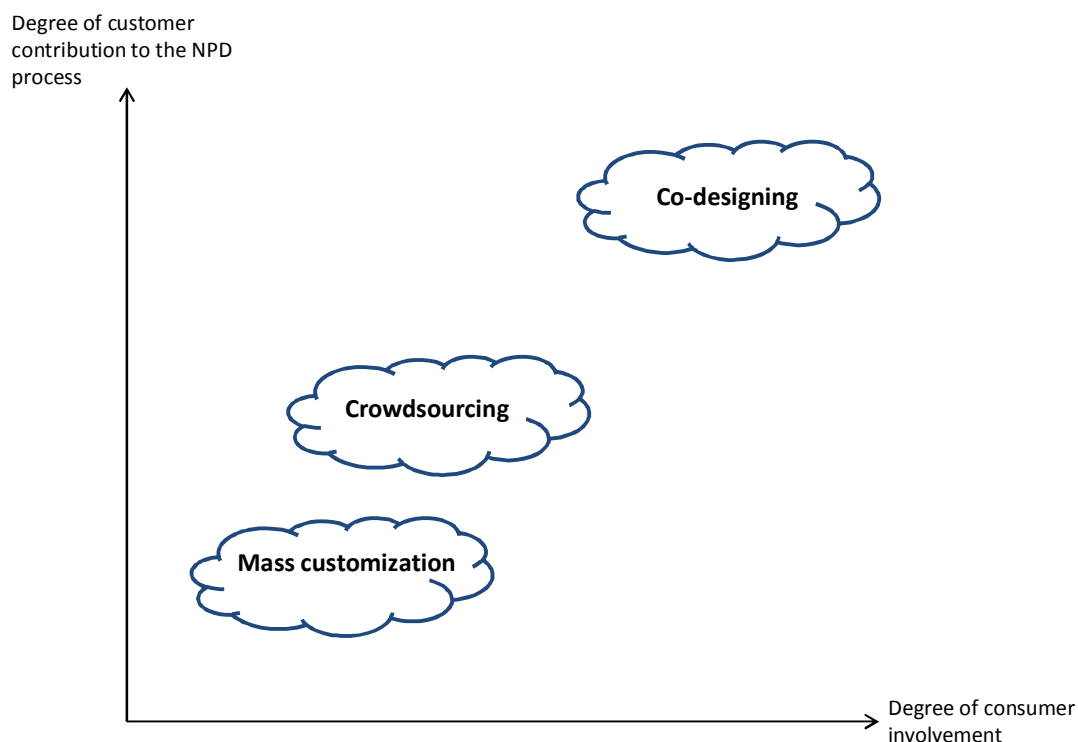
focus on market research in order to find out about new customer needs and trends. Instead, it allows them to observe and identify latest trends throughout the co-design process. (Berger et al. 2003, p. 42ff) Despite of the argument that co-designing requires the cooperation of the companies' experts and customers that is theoretically emphasized in the case of miAdidas, a clear distinction shall be made to the concept of mass customization. The main reason is that, even though the customers create their individual designs, it is a matter of fact that the product is individually produced – for the creator only. In other words, the firm no longer follows the made-to-stock strategy with the miAdidas concept; instead it implemented a made-to-order strategy. (Piller et al. 2003, p. 10) Of course, the firm can deduce market trends from the created designs. However, to really consider the concept as co-designing, the stage in which the customers are involved into the product development process is too late considering the impact that can be commonly evolved. For the purpose of this paper and the study, miAdidas is considered as a characteristic benchmark of mass customization and co-designing. As a result, co-designing requires a higher degree of consumer involvement and impact in the NPD process.

#### **3.3.4 Degree of consumer involvement**

After the three possible forms of consumer co-creation (mass customization, crowdsourcing and co-designing) have been presented and discussed, they will now be compared with each other. Comparative parameters are on the one hand, the degree of consumer involvement and on the other hand, the degree of customer contribution to the NPD process. While the degree of consumer involvement means the extent to which consumers are involved in the co-creation activities, the degree of customer contribution to the NPD process refers to the scope of customers' proactive role across the NPD process.

As figure 7 shows, mass customization is considered to be the one form having the smallest degree in both consumer involvement and customer contribution to the NPD process. Basically, the concept of mass customization regards customers as co-designers in the NPD process, due to the fact that they adapt products according to their individual needs and preferences. It should be pointed out that the product is already created by

the company and the adaptation process can be done with the help of a configuration system also provided by the company. (Ogawa et al. 2006, p. 67) Compared to mass customization, crowdsourcing has a higher degree of customer contribution to the NPD process and also the degree of consumer involvement is higher. This is based on the fact that crowdsourcing refers to the companies' intention to exploit the consumers' creativity, knowledge as well as novel ideas. (Kleemann et al. 2008, p. 22) Especially the higher degree of customer contribution to the NPD process can be justified by the consumer contribution already during the first stage of the NPD process, namely the idea generation stage. Apart from this, a crucial factor for the higher grading / classification in comparison to mass customization is that the concept of crowdsourcing allows consumers to provide solutions to companies that are of higher quality and furthermore, better meet customers' needs and expectations.



**Figure 7: Degree of consumer involvement and degree of customer contribution to the NPD process**  
Source: own illustration

Finally, in comparison to mass customization and crowdsourcing, co-designing ranks the highest degree in both the degree of consumer involvement and the degree of customer

contribution to the NPD process. Co-designing is characterized by making customers constructive contributors in the NPD process. (Albinsson et al. 2007, p. 980) Furthermore, it is described as a creative and collective process, in which customers design products in close collaboration with each other. It is essential to note that the customers involved are no professional designers in the proper sense. (Sanders et al. 2008, p. 6) As a result, in the context of co-designing consumers have the highest degree of consumer involvement and can make the greatest contribution to the NPD process.

### ***3.4 Corporations' incentives for consumer co-creation***

This chapter presents deeper analysis of consumer types that positively respond to consumer co-creation in the NPD process. And even more importantly for the underlying study (see chapter 4), an emphasis is put on the different kinds of incentives that corporations offer in order to make customers participate in the co-creation process across the NPD process.

Basically, consumers are also referred to as crowd in the context of co-creation. Estelles et al. (2012) identified the following expressions, which can be found in the literature as synonymously used or as referred to as crowd:

“General internet public, large group of people, individuals, people or members of the crowd; users (referring to a firm), consumers, customers, voluntary users, internet-scale community, or organized and online communities” (Estelles et al. 2012, p. 193)

Characteristics that are vital for the definition of a crowd refer to the possession of individual skills, type of the people, heterogeneity, number of people, their typology etc. Especially with reference to the number of people most researchers talk about “an indeterminate and large group of individuals, a group of people who do not necessarily know each other, and a loosely bound public” (Estelles et al. 2012, p. 193). Only in case of online communities the chances are higher of people who already know each other. (Estelles et al. 2012, p. 193)

### 3.4.1 Four consumer types

In the context of consumer co-creation four consumer types have been identified who are both able and willing to engage in co-creation processes. (Hoyer et al. 2010, p. 288; Schmatzer 2014, p. 8)

- a) Innovators
- b) Lead users
- c) Emergent consumers
- d) Market mavens

The first type, the *innovators*, are also known as extreme users. Their special know-how as well as their ability to share their individual ideas in an effective and well-designed way often allows them to become contributors in the NPD process. (Filieri 2013, p. 42; Schmatzer 2014, p. 8) Especially, innovators are regarded as the earliest to adopt new products. (Hoyer et al. 2010, p. 285; Schmatzer 2014, p. 8) The second type refers to the *lead users*. This term has been strongly coined by von Hippel (1986, 2002, 2005). Von Hippel (1986) terms lead users as users who recognize potential needs before others do. (von Hippel 1986, p. 798; Schmatzer 2014, p. 8) Furthermore, von Hippel (1986) describes lead users as a “need-forecasting laboratory” meaning that they are able to discover needs that will be of great value for the general market place months or even years later. Not only can lead users contribute to the NPD, they are in the position to very well benefit from it by being able to acquire a novel product presenting a solution to prevailing needs. (von Hippel 1986, p. 791, 796) The third type represents *emergent consumers*. This type of consumers is derived from the approach of emergent nature by Hoffmann et al. (2010). According to Hoffmann et al. (2010) emergent consumers possess “the unique capability to imagine or envision how concepts might be further developed, so that they will be successful in the mainstream marketplace.” (Hoffmann et al. 2010, p. 855) In other words, emergent consumers are able to discover, and to a certain extent set trends, which are alluring and valuable to mainstream consumers. (Hoyer et al. 2010, p. 288; Schmatzer 2014, p. 9) The fourth type refers to the *market mavens*. Market mavens are known for their innovative ability to impact purchase decision of other customers. (Walsh et al. 2012, p. 74; Schmatzer 2014, p. 9) On the one hand, this can be derived from a well-established know-how about the marketplace and an enormously widespread set of



information about products, services and particular brands. On the other hand, their interest in smart buying, often with the use of coupons and the tendency to spend significantly more time on shopping offers an influential factor for other customers. Thus, by sharing their information and knowledge about new product releases, sales and special offers as well as the best places to shop, it is reasonable that market mavens are appealing to other customers concerning upcoming purchasing decisions. (Clark et al. 2005, p. 297; Schmatzer 2014, p. 9)

These four types allow a broad classification about those consumers who are more eager to engage in co-creation activities across the NPD process than others. (Hoyer et al. 2010, p. 288; Schmatzer 2014, p. 9) However, only by the identification of these highly potential customers, the question remains unanswered, how corporations can benefit from their innovative knowledge and highly valuable information. Therefore, the next chapter will discuss the different forms of consumer incentives, which corporations must provide in order to gain the respective customer base as co-creators in their new product development.

### **3.4.2 Incentives for consumer co-creation**

Van Doorn et al. (2010) call attention to a lack of research and therefore common understanding concerning consumer incentives especially regarding the NPD process. (van Doorn et al. 2010, p. 253; Schmatzer 2014, p. 9) Yet, this chapter will present all relevant types of incentives with respect to consumer co-creation.

According to Hoyer (2010) consumer incentives can be classified into the following four factors: (Hoyer et al. 2010, p. 285; Schmatzer 2014, p. 8)

- Psychological factors
- Financial factors
- Social factors
- Technological factors

To begin with the incentives of *psychological factors*, they can be best described by the consumers' desire to realize their individually specific goals that are closely related to

their personal values. These goals and values signify so-called “motivational forces” or “psychological drives” (Etgar, 2008, p. 101), which in the end may decide about engaging in co-creation projects or not. Decisive drives may include not only psychological drives but also economic and social drives. (Etgar 2008 p. 101; Schmatzer 2014, p. 11) As Lusch et al. (1992) refer to psychological rewards they present these kinds of incentives as “the degree of satisfaction, enjoyment, gratification or happiness that is associated with internal or external exchange” (Lusch et al. 1992, p. 128).

In this context, Etgar (2008) also highlights the theoretical approach of distinguishing between extrinsic and intrinsic values considering the engagement in co-creation activities. Whilst extrinsic values entail the fulfillment of personal needs such as exceptionality, individuality and self-expression intrinsic values imply diversion from customers’ daily life and the sake of the experience itself. (Etgar 2008, p. 102; Schmatzer 2014, p. 11) Further, intrinsic values are closely related to creative endeavor, which has an impact on consumers’ decision for active contribution in firms’ NPD process. (Csikszentmihalyi 1996; Deci et al. 1985; Lakhani et al. 2005; Shah 2006 in O’Hern et al. 2008, p. 6)

The second form of incentives refers to *financial factors*, which are also referred to as economic drives (Etgar 2008, p. 101) as well as economic rewards (Lusch et al. 1992, p. 128). They are the most intuitive factor concerning the decision whether or not to engage in co-creation processes. (Lusch et al. 1992, p. 128; Schmatzer 2014, p. 9) Financial factors can be divided in two different types of incentives, which both are concerned with financial or monetary characteristics. Hence, in order to attract customers for co-creation activities, firms can offer on the one hand, monetary prizes or profit sharing models and on the other hand, the acquisition of the intellectual property. Basis for all kind of financial incentives is a targeted outcome of a specific exchange process, often within a predetermined scope of a specific NPD project. (Hoyer et al. 2010, p. 288; Schmatzer 2014, p. 9) The term of “free revealing” contradicts the fact that financial incentives are the most evident, and is well explained by von Hippel et al. (2006). “Free revealing” stands for high motivation and a strong drive to “freely reveal” ideas for novel products and services, information and special know-how with respect to the product development regardless of economic rewards. More globally speaking, “free

revealing” is seen as an essential aspect with respect to open innovation. (von Hippel et al. 2006, p. 304)

Besides psychological and financial incentives consumer co-creation can also be incentivized by *social factors*. Etgar (2008) especially emphasizes the stimulation of social esteem as well as customers seeking of status. In this context he mentions and elaborates communication networks such as social networks and co-creation communities. Know-how, information and skills become easier accessible through the direct dialog with peers by the use of communication networks. Another important factor with regard to social incentives is the possibility to create social contact values via social networks and specific co-creation communities. Furthermore, these platforms offer customers the possibility to realize the joy of sharing their specific knowledge, skills as well as their personal experience with other customers having the same aspiration and interest. (Etgar 2008, p. 103; Schmatzer 2014, p. 10) Apart from co-creation, related issues that are discussed on the respective platforms and blogs, the online interaction helps to develop strong interpersonal and strong social relationships by also using them for diverse non-co-creation related topics. Eventually, Nambisan (2002) presents the recognition by peers, corporations and product users as an appropriate and straight way to satisfy the customers’ desire of social esteem and seeking of status. (Nambisan 2002, p. 405; Schmatzer 2014, p. 10)

The fourth form of incentives identified by Hoyer (2010) refers to the *technological factors*. Often customers engage in co-creation activities because companies allow them to contribute their personal specific know-how in technology matters. Interestingly, this may correlate with the social networks and communities (as has been discussed above) since customers can acquire massive cognitive benefits through the exchange of information, general inputs and specific ideas from discussions with peers in particular communities (blogs, forums, development groups by the firm etc.). (Hoyer et al. 2010, p. 288; Schmatzer 2014, p. 10; Mladenow et al. 2014, p. 77) The extent of impact and range technological incentives can have are very well demonstrated by Etgar (2008): „The major contribution of technological changes is their ability to allow rapid and low cost interactions between consumers and suppliers and among consumers themselves leading to tremendous reduction in the economic costs, time and effort required for consumer

participation in value creation. (...) the advent of the Internet offers true interactivity with the consumer, customer-specific, situational personalization, and the opportunity for real-time adjustments to a firm's offering to customers, as well as changes in consumer expectations regarding firm service strategies that flow from these developments". (Etgar 2008, p. 99f)

In a nutshell, it can be distinguished between economic and non-economic incentives (see Table 1). Lusch et al. (1992) underline the high potential of non-economic incentives to gain customers for co-creation activities across the NPD process. (Lusch et al. 1992, p. 128; Schmatzer 2014, p. 11) Another important aspect is the fast development of social media and all kinds of communication channels, such as forums, blogs, video on demand etc., that supports the thrive of consumer co-creation. (Etgar 2008, p. 100)

	<b>Economic incentives</b>	<b>Non-economic incentives</b>
Psychological factors		x
Financial factors	x	
Social factors		x
Technological factors		x

**Table 1: Consumer incentives**

Source: Hoyer et al. 2010, p. 288f; Schmatzer 2014, p. 9ff

One last factor that cannot be clearly allocated to one of the four types of incentives, but can affect all four of them, refers to risk. Etgar (2008) states that consumers often decide to actively contribute to co-creation projects in order to reduce risks with regard to purchasing unsuitable products. Thus, companies evidently benefit from the customers' engagement and contribution to actively help avoiding potential risks. (Etgar 2008, p. 101; Schmatzer 2014, p. 11)

## **4 Empirical study consumer co-creation**

Followed by the detailed analysis of the theoretically relevant and underlying concepts and terms with reference to consumer co-creation in the NPD process in chapter 2 and 3, this part of the paper discusses the study conducted. Basically, this chapter is divided into five parts / subchapters. Followed by the motivation and objective of the study that is presented in chapter 4.1, the methodology and data will be described in chapter 4.2. Chapter 4.3 explains the model that has been developed. Chapter 4.4 provides the results of the study and finally, chapter 4.5 aims to give recommendations for action for companies.

### **4.1 Motivation and objective of the study**

One question raised by HYVE was used as driving force for the study, namely:

*“There are so many creative people, but how can firms utilize their creativity and know-how for new product development?”* (Co-Creation in New Product Development, as of February 23<sup>rd</sup>, 2015)

“HYVE – the innovation company” devotes its work to innovation concepts focused on consumer co-creation by actively integrating consumers into the NPD process. Furthermore, they emphasize that the active, well-informed and connected consumers in today’s globalized world are a fundamental success factor for the participative open innovation systems. (HYVE, as of March 15th 2015)

With respect to the practical implementation, HYVE has organized 30 idea contests where 32.587 participants have submitted 83.706 different ideas and designs since 2008. Based on their work and professional experience they identified relevant and informative facts about co-creation as well as the role of new innovation channels, which are known to be considerably important in co-creation projects: (Co-Creation in New Product Development, as of February 23<sup>rd</sup>, 2015)

- As a matter of fact, a lot of users, more precisely ranging from 10 percent to nearly 40 percent, engage in modifying and developing products.
- Generally, communities offer a substantial source of information. These communities are often interconnected with social media (i.e. social networks,

blogs, forums, user generated content, review sites) where information can be found for almost every topic that helps companies to understand consumer needs and problems.

- Additionally, companies can also gather information by observing so-called offline users, who try to find solutions themselves.
- Especially crowdsourcing platforms are used for submitting novel ideas as well as for giving constructive feedback to peer consumers on their ideas. (Co-Creation in New Product Development, as of February 23rd, 2015)

Taking this knowledge and facts based on professional experience as a starting point, the study aims to identify and analyze companies, which apply consumer co-creation in their NPD process. Generally, most of the existing studies and literature analysis deal with the most prominent examples such as Threadless, Quirky or Nike. Especially, Threadless seems to be the most prominent textbook example in the field of consumer co-creation. As a matter of fact, most companies that have already been researched in the context of consumer co-creation are from the United States. Consequently, this study intends to shed a light on the European market and corporations, which innovate with consumers. Therefore, the European market in connection with consumer co-creation is examined.

The study's aim is to categorize and analyze each sample (i.e. an enterprise, which uses co-creation as an open innovation tool) based on the following criteria:

- In which **industry** does the corporation perform a co-creation activity?
- Which **concept** is applied for the co-creation activity?
- Which **form** of consumer co-creation is applied?
- Which **incentives** does the corporation offer in order to make consumers engage in a co-creation activity?
- What is the **target group** of a co-creation activity?
- What is the **timeframe** of a co-creation activity?
- For whom is the **use of the product** that results from a co-creation activity?
- In which **stages in the NPD process** does the co-creation activity take place?

## **4.2 Methodology**

The methodological approach explains the choice of research method, as well as the steps performed for the evaluation of the study.

The applied method for the study is an online research method. To find corporations involving consumers into their NPD process via co-creation activities, internet-based research was conducted. More specifically, by searching online for companies, which apply consumer co-creation as a strategic tool in the NPD process, existing data was used and analyzed.

Generally, internet-based research has gained in importance in recent years. The most popular reason for this is that the internet allows a very quick access to an enormous pool of information. Apart from the analysis of existing data also interventions, observations and surveys are widely spread methods of internet-based research. (Internet-based research, as of April 2<sup>nd</sup>, 2015)

With respect to the underlying study, information was gathered in two ways. On the one hand, corresponding corporations were found through search engines by entering relevant and targeted keywords, primarily based on the industry. Relevant keywords were for example:

- co-creation in the fashion industry
- co-creation in the cosmetics industry
- co-creation in the foods industry
- co-creation in the lifestyle industry
- co-creation in the technology industry
- companies, which apply consumer co-creation
- co-creation in the European market

Based on the search results, the companies' websites were investigated and analyzed. On the other hand, applicable companies were discovered in various papers during the literature research and analysis.

Furthermore, through the online research, two platforms for co-creation projects were found. First, unseraller.de<sup>4</sup> using the following slogan: *“Bei unserAller entscheidest Du, wie neue Produkte aussehen.”* (unserAller, as of April 2<sup>nd</sup>, 2015) Second, jovoto.com<sup>5</sup> stating *“We create together. Brands and creatives use jovoto to collaborate on exciting projects. Creatives earn money and brands get a fresh, global perspective.”* (Jovoto, as of April 2<sup>nd</sup>, 2015) Thus, a lot of valuable input was gained through the research of the various projects by different companies hosted by the platforms.

In general, it was merely already existing online data used that has been considered and evaluated as public. For the evaluation of the individual cases it was necessary to have access to all-encompassing project information requested from / for the study framework. Some companies only provided limited information without special permission. Thus, in some cases it was required to create an account (incl. personal information, login data, etc.) in order to being able to analyze the co-creation project. Even though, research that utilizes data that becomes only accessible through special permission is generally not considered to be publicly available. However, if the access is not restricted beyond the creation of an account (i.e. everyone who created a personal account and is able to access with a personal username and password), the data is qualified as publicly available. (Internet-based research, as of April 2<sup>nd</sup>, 2015)

The samples found for the study have been collected in a database (in form of an excel file) and qualified according to the framework, which has been established in accordance with the model (for detailed explanation see chapter 4.3, table 3 and Appendix I). After the research work has been completed, all examples have been assigned to the key criteria and the related items. In order to generate results from the collected study examples, the Excel database was evaluated. For this purpose a descriptive evaluation was used. First of all, four main key criteria have been selected. Two of these main key criteria have practical relevance and two have theoretical relevance. While practical relevance means that they were derived and defined based on the research work, theoretical relevance refers to the literature analysis in chapter 2 (i.e. NPD process) and chapter 3 (consumer co-creation). The remaining five key criteria serve as framework conditions. Secondly, each subordinated item of those four main key criteria has been

---

<sup>4</sup> <https://unseraller.de/>, as of April 2<sup>nd</sup>, 2015

<sup>5</sup> <http://www.jovoto.com/>, as of April 2<sup>nd</sup>, 2015



analyzed with all items of the other key criteria, except for “country” since no value of information could be generated. In case of significant and conspicuous relations among various items it was allowed to use them for the purpose of plausibility checks. In order to display the summarized evaluation of the empirical survey graphs were designed.

### 4.3 Data

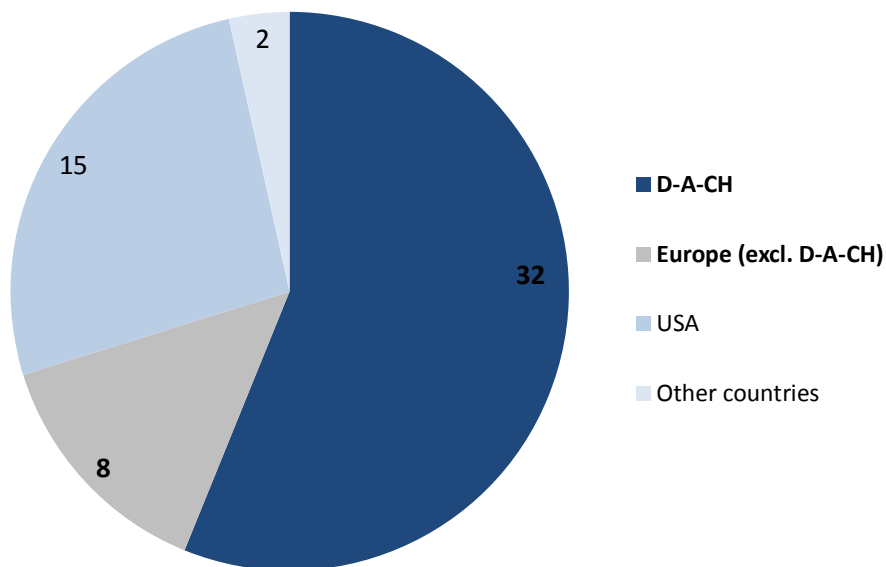
From the beginning, the focus of research was put on gathering data from the D-A-CH region with a potential extension to whole Europe. However, during the research work and more importantly the literature analysis, the most prominent corporations in the field of consumer co-creation have been repeatedly encountered. The problem associated with the typical and most popular examples is that all respective firms are from the United States. At the end, 15 study samples from the United States were found in a more incidental way, since the focal point was clearly put on the D-A-CH region and potentially the rest of Europe. As displayed in table 2, the bold printed names indicate the most popular and probably the most classic corporations in the context of consumer co-creation. Specifically, Threadless and Quirky find particularly high attention.

Country	Company
USA	<b>Threadless</b>
USA	Nike
USA	Starbucks
USA	M&Ms
USA	Zazzle
USA	<b>Procter &amp; Gamble</b>
USA	<b>Cafepress</b>
USA	<b>Quirky</b>
USA	Kraft
USA	McDonalds
USA	Dell
USA	IBM
USA	General Mills
USA	Cisco
USA	Netflix

**Table 2: Samples from the United States**

Source: own illustration

Overall, 59 samples (i.e. corporations) were found before the limitation of the study. This sample size arises from the following distribution of geographic areas: 32 in the D-A-CH region, 15 in the USA, eight in Europe (excl. D-A-CH) and two in other countries (see figure 8). It should be outlined clearly that the samples found in the USA as well as in other countries are byproducts. As initially intended, the study was limited to the D-A-CH region and Europe (excl. D-A-CH). Hence, the actual sample size for the study comprises of 40 corporations. This proportion is marked in figure 8 as printed in bold.



**Figure 8: Overall sample size before study limitation**

Source: own illustration

Furthermore, it should be mentioned that most studies found in the existing literature with reference to the topic of consumer co-creations deal with big companies and repeatedly with the most popular examples, such as P&G, Threadless, quirky etc. However, the sample size reveals that consumer co-creation is also applied by small and medium enterprises (SMEs). Thus, it can be assumed that co-creation is a very effective and efficient tool for the NPD process that is not only attractive for big companies but also for SMEs.

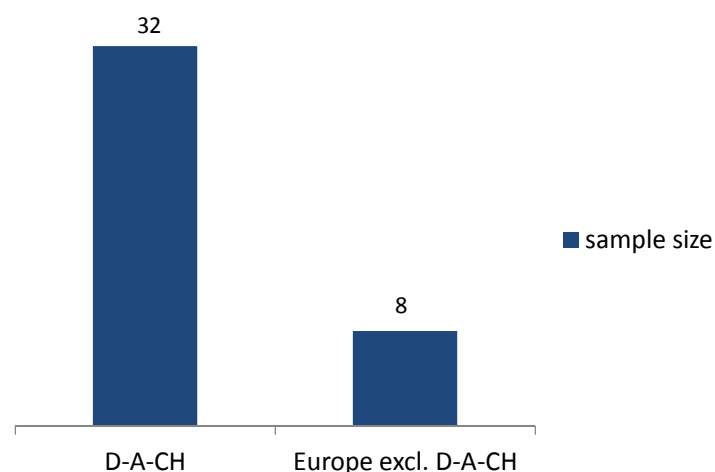
## 4.4 Model

Generally the model serves as a framework that consists of nine key criteria. Each of those key criteria will be further divided into relevant and essential sub criteria, also referred to as items (see table 3). This chapter presents an explanation of all key criteria including all items respectively.

### 4.4.1 Country

The first key criterion refers to the country from which the respective corporations originate. What is more, the country was used as the determining factor in the limitation of the study (see also chapter 4.2). As has been described earlier, this study is limited to the European market with a strong focus on the German speaking countries, also referred to as the “D-A-CH” countries. The acronym represents Germany (D stands for Deutschland), Austria (A stands for Austria) and Switzerland (CH stands for Confoederatio Helvetica).

The specified focus can be very well reflected on the basis of the sample size. As can be seen in figure 9, the sample size consists of 32 corporations originated from the D-A-CH region and eight from the rest of Europe.



**Figure 9: Key criterion “country” distributed among the sample**

Source: own illustration

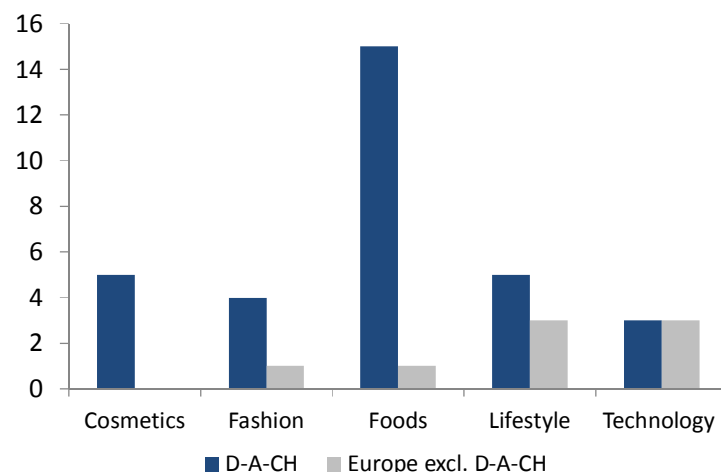
Consumer co-creation in the NPD process								
Country	Industry	Concept	Form	Incentive	Target group	Timeframe	Use of the product	Stages in the NPD process
D-A-CH Europe excl. D-A-CH	Cosmetics	Gain in know-how	Co-designing	Financial	Not restricted	Limited	Corporation	Idea generation
	Fashion	New composition	Crowdsourcing	Social	Restricted	Unlimited	Creator	Concept development and testing
	Foods	Design Change	Mass customization	Technological			General public	Product development
	Lifestyle	New product development		Psychological				Test marketing
	Technology							

**Table 3: Framework of the model for the underlying study**

Source: own illustration

#### 4.4.2 Industry

After a rough investigation of the European market and especially the D-A-CH countries, the following industries were considered to be promising concerning the study results and subsequently selected: *cosmetics, fashion, foods, lifestyle, and technology*. The individual industries are subordinates of the key criterion and accordingly considered to be the items of the key criterion “industry”. How the industries are distributed among the sample is shown in figure 10. The largest number of companies, which have been working with consumer co-creation, was found in the D-A-CH region in the foods industry. A remarkable number of 15 corporations was identified. In contrast, for the rest of Europe only one further example was found. While in the D-A-CH region five firms were found who engage in consumer co-creation in the cosmetics industry none were found for the rest of Europe. In the fashion industry, four examples were identified in the D-A-CH region and only one in the rest of Europe. The lifestyle industry has five examples in the D-A-CH region and three in the rest of Europe. The technology industry is uniformly distributed with three examples for the D-A-CH countries and the rest of Europe. It can be clearly seen that except for the technology industry the number of examples in the D-A-CH region outweighs the one from the rest of Europe. This evidently reflects the strong focus put on the German speaking countries.



**Figure 10: Key criterion “industry” distributed among the sample**

Source: own illustration

#### 4.4.3 Concept

The key criterion “concept” describes both the companies’ intention as well as the companies’ goal behind the consumer co-creation activity. As part of this key criterion the following four subordinate items resulted from the empirical analysis: *gain in know-how, new composition, design change, and new product development*. However, before discussing each single item it should be noted that the distinction between the concepts was very difficult. Also, often it was very ambiguous to define as well as to assign an item according to the concept and specified outcome of the company.

##### a) Gain in know-how

The objective of gaining know-how or know-how transfer is to get valuable input from the consumers based on their opinions, reviews, and innovative suggestions and ideas. In most cases, this step happens very late in the product development process because it is a prerequisite that there is already a product that can be tested, reviewed and potentially adapted to consumers’ needs and desires.

##### b) New composition

New composition means the individual composition of existing components related to a specific product. This concept allows consumers to individualize already existing products according to their own specifications. To name a very popular example, mymuesli is an appropriate sample for new composition. In some cases, a configuration tool supports and facilitates the individual composition (e.g. IKEA home planner, Ducati – “design your dream Ducati”).

##### c) Design change

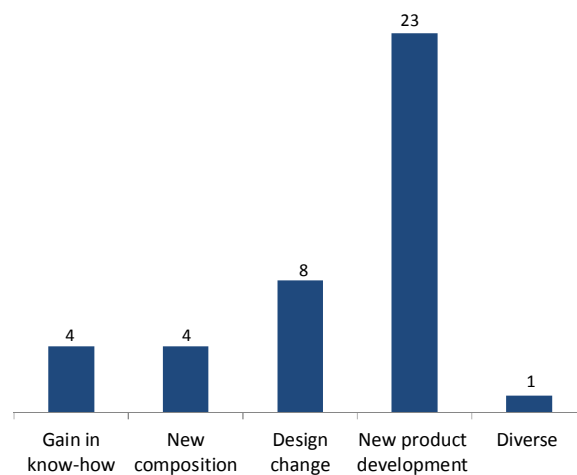
Design change refers to a new modification of a product that already exists. In other words one can say that it is an introduction of a novelty to an already existing product. The design change can affect a new color, a new feature, a new flavor, or just a personalized design of the product (e.g. Adidas – “miAdidas”, Dream Heel – Traumschuh, ANNA Inspiring Jewellery – Design your bracelet)

##### d) New product development

Generally, new product development really means the creation of a new product. Especially with this concept it was very difficult to find a distinction that allows for a

coherent application. In many cases it concerns an extension, alteration of an existing product as well that relates to only one component or facet of the product. However, in order to define a clear distinction to the other concepts, a decisive criterion for the positive decision for new product development was found, namely: in contrast to design-change and new composition (note: gain in know-how refers to a different objective and is more clearly distinguishable) the product is created for the general public and not just personalized for the creator. This criterion is not exclusively applicable but definitively indicative.

An illustrative example is dm Drogeriemarkt with the Balea shower. In this case, customers were asked to create a special edition incl. a novel scent, packaging and a name. Obviously, a shower creme is not a new product itself. However, the crucial aspect that was assessed is that it is a new product in the line of shower cremes.



**Figure 11: Key criterion “concept” distributed among the sample**

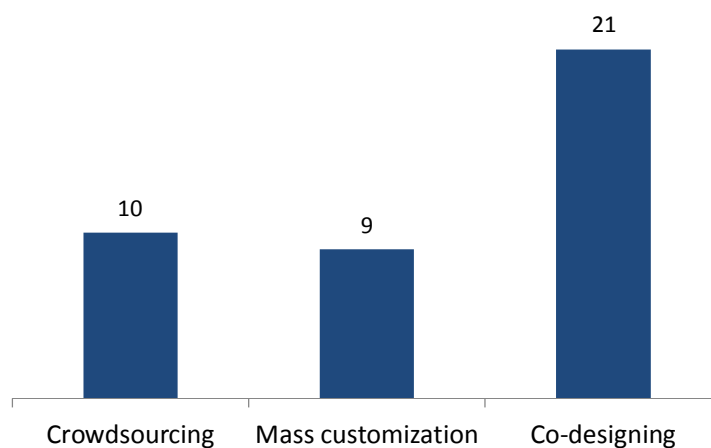
Source: own illustration

As can be seen in figure 11 the most samples (23) were found in the area of new product development concept. This corresponds to the purpose of this thesis, and confirms that the research focus was put onto identifying firms who work with consumer co-creation in the field of new product development. It shall be pointed out that in many cases firms claim and sell their cooperative innovation project as co-creation. After testing the projects’ approach against the measurements it turned out that some of them align more with another concept and are therefore assigned to one of the other three options. Subsequently four samples were allocated to the gain in know-how and new composition

approach. Eight examples were identified as design change approach and only one could not specifically be assigned, due to the variety of approach used by the firm.

#### 4.4.4 Form of consumer co-creation

As has been extensively discussed in chapter 3.3 there are different forms of consumer co-creation. A distinction was made between crowdsourcing, mass customization and co-designing. With respect to the consumer involvement the focus of the research study was put on the highest degree of consumer involvement, which is represented by the form of co-designing. Accordingly, 21 samples were found. As figure 12 shows, ten samples were identified for crowdsourcing and nine for mass customization.



**Figure 12: Key criterion “form of consumer co-creation” distributed among the sample**  
Source: own illustration

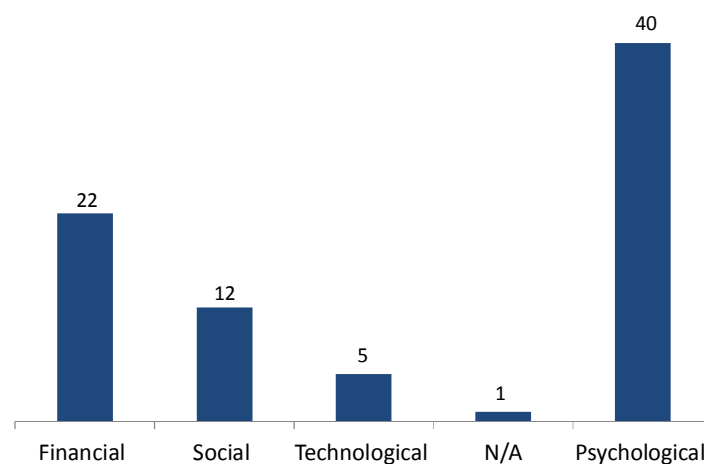
#### 4.4.5 Incentive

Incentives for consumer co-creation activities can be divided into psychological-, financial-, social-, and technological incentives. The characteristics of each form have been outlined in detail in chapter 3.4.2. As a matter of fact, psychological incentives are hard to identify and measure, since they are related to personal values. Due to the fact that they are known to be a decisive factor whether to engage in co-creation activities or not, they are assumed to be prerequisite in all study samples. Hence, the evaluation and analysis has been limited to the residual three incentives. Financial incentives refer to monetary factors, which are provided by the company. This could include monetary



prizes or profit sharing models and in some cases the acquisition of intellectual property. (Hoyer et al. 2010, p. 288; Schmatzer 2014, p. 9) Social incentives refer to customers seeking of status and the stimulation of social esteem through the participation in collective co-creation activities. Another crucial aspect is the customers' desire to share their know-how and skills, which allows them to contribute to a common product development. (Etgar 2008, p. 103; Schmatzer 2014, p. 10) Finally, the technological incentives are characterized by the customers' possibility, given by the firms, to contribute their personal and very specific know-how in technology matters. (Hoyer et al. 2010, p. 288; Schmatzer 2014, p. 10) In other words, the technological incentives are an extension of the social incentives, namely by the technologically specific know-how, which customers want to contribute to technological changes. With regard to the study samples, it was very often the case that more than one type of incentive was applicable. In order to obtain distinctive study results the apparently more dominant incentive was chosen.

Subsequently, as figure 13 presents, all 40 study samples are psychologically incentivized since this decides about participating in a co-creation activity or not. Among those, 22 have financial incentives, twelve social incentives and five technological incentives. For just one sample no information could be found.



**Figure 13: Key criterion “incentive” distributed among the sample**  
Source: own illustration

#### **4.4.6 Target group**

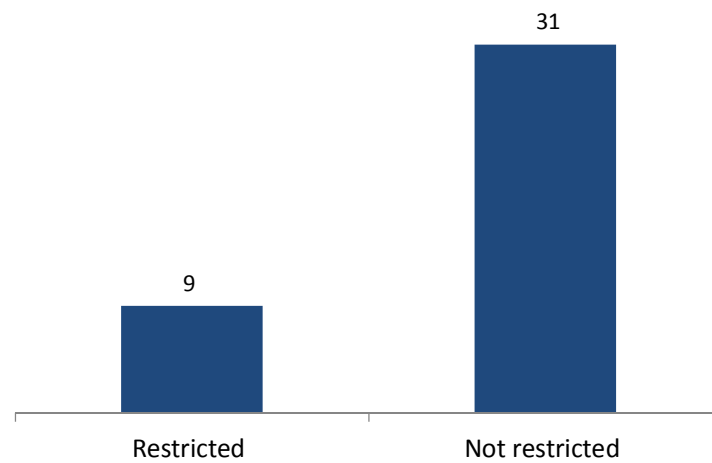
The next key criterion that has been considered to be essential is target group. In the scope of this study, target group refers to a potential restriction of the group of participants imposed by the company.

Generally a group of participants can also be referred to as crowd, which is defined as a large group of individuals. Estelles-Arolas et al. (2012) argue that the crowd's heterogeneity depends upon the requirements of each co-creation project. Thus a crowd is a group of individuals whose heterogeneity, optimal number, as well as their personal know-how is determined by the requirements of the co-creation project. With respect to the optimal number of participants, it can be said that this depends on the individual co-creation project. Whereas there are projects that require unlimited participants – as many as possible others require a restriction concerning the number of participating people. (Estelles-Arolas et al. 2012, p. 193f)

A possible restriction can be done in two different ways. On the one hand, the company may invite consumers to participate in a co-creation project. This means that all people who want to take part must apply. The company then selects a certain predetermined number of applicants who can contribute to the co-creation project. Through this selection process, the company may retrieve specific information about special qualifications and skills required for the respective project.

On the other hand, there might be a restriction of the target group due to the nature of the product itself. This kind of restriction is not necessarily strict but rather trend giving. An example for this could be the Nivea Cellular Perfect Skin creme for women. In this case it can be assumed that it is likely that mostly women define themselves as a target group. It shall be pointed out that limitations due to language barriers have been disregarded. Even though several project information are primarily presented in German, the content is in most cases also available in English on the websites. In addition, it can be argued that the focus of the study is put on the D-A-CH country where German is the adequate first language and therefore sufficient. Hence, it can be concluded that several restrictions refer to factors that are either assigned by the company and hinders customers from participating or are due to the nature of the product itself.

As can be seen in figure 14, the majority of the study sample, namely 31, has a not restricted target group. Only nine study samples have a restricted target group.

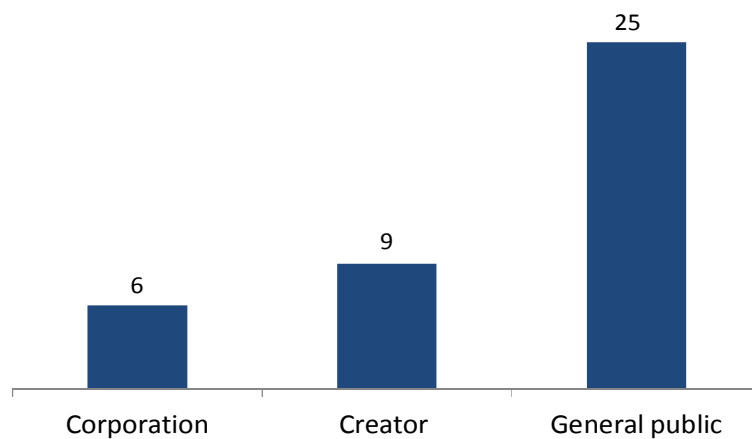


**Figure 14: Key criterion “target group” distributed among the sample**  
Source: own illustration

#### **4.4.7 Use of the product**

The key criterion “use of the product” is essential in relation to the question about for whom the new product will be created. In other words, it will answer the question about who will benefit from the novel product. Based on the research, the following three subordinate categories (i.e. items) have been identified: the corporation, the general public (i.e. crowd) and the creator.

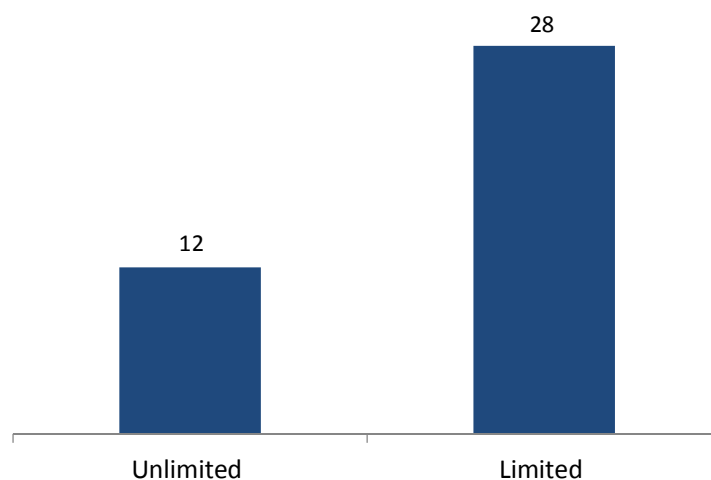
As figure 15 shows, six samples apply to the use of the product of corporations. Furthermore, nine samples refer to the use of the product by the creator and the major part, namely 25 samples indicate a use of the product by the general public.



**Figure 15: Key criterion “use of the product” distributed among the sample**  
Source: own illustration

#### 4.4.8 Timeframe

The key criterion “timeframe” examines the period of time during which a co-creation project takes place. This timeframe can either be limited or unlimited in time. In the event of a limited timeframe, an exact starting- and end date is set. In some cases, the projects with a limited period of time are further structured into various project phases (e.g. projects from the platform unseraller.de). In the event of an unlimited timeframe the co-creation project is ongoing for an undetermined and undefined period of time. As figure 16 presents, 28 samples have a limited timeframe and twelve are unlimited in time.



**Figure 16: Key criterion “timeframe” distributed among the sample**  
Source: own illustration

#### **4.4.9 Stages in the NPD process**

A very important key criterion represents the stages in the NPD process. This criterion specifies and describes the respective stages of the NPD process, in which the co-creation project takes place. Basic scientific theories and approaches have been analyzed and discussed in Chapter 2. Generally, the study builds upon this theoretical basis. However, for the practical purpose of this study, it is necessary to modify and extend the four stages, which were identified to have relevant potential for consumer co-creation, to some extent.

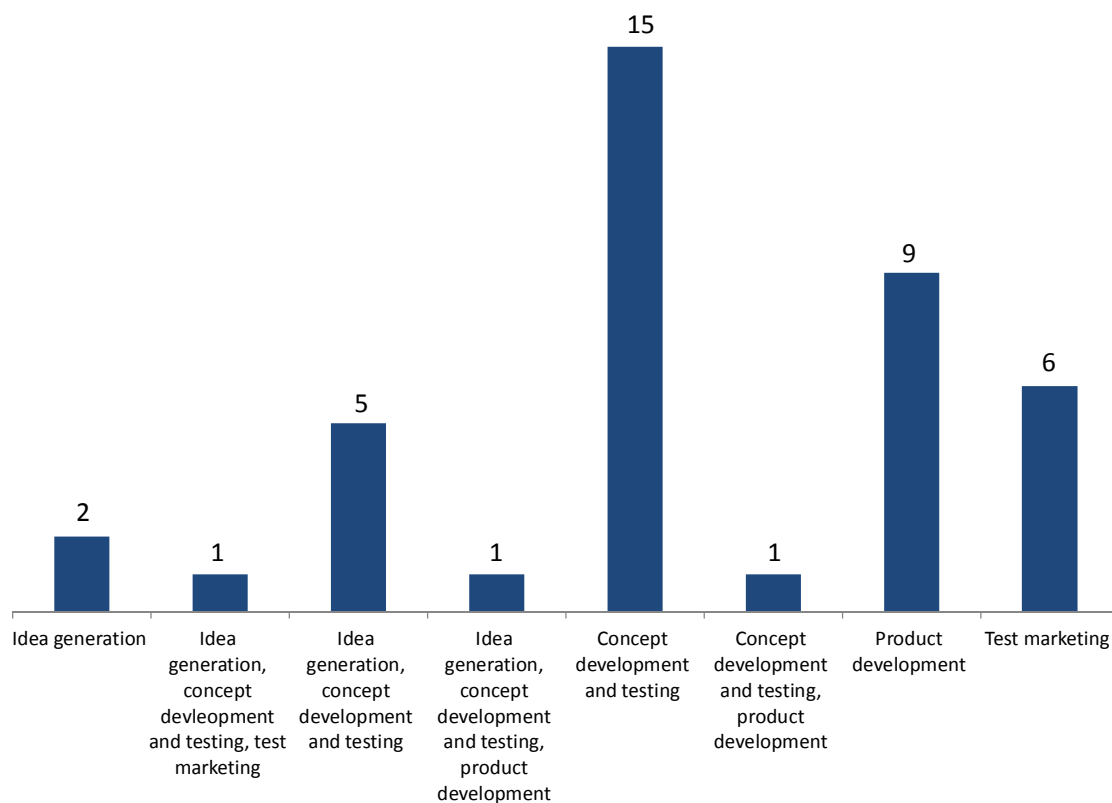
For the evaluation of the study the following four relevant stages for consumer involvement have been used (in accordance with the model of Kotler et al. 2012): idea generation, concept development and testing, product development, and test marketing (see figure 4).

To begin with idea generation, no adaptations of the underlying scientific approaches have to be made. In the event of idea generation, consumers pro-actively communicate their novel product ideas to corporations. These novel ideas can either be the modification or extension of an already existing product (line) or a completely new product idea. The most decisive criterion is that the consumer initiates the novel product idea. Thus, it is crucial that the consumer proactively makes a proposal to the company. If the company initiates and publishes an already concrete idea for a new product or an extension for a new product within a line this does not account to idea generation. Rather this counts as the customers' contribution to the concept development. Furthermore, the next stage, namely the concept development and testing, requires some adaptations in the comparison of the theoretical basis and the practical application. While scientific analysis revealed that during this stage companies ask the consumers to test the developed concepts, the practical analysis exposed that consumers are already involved in the active development of the concept for a new product. This means that companies announce that they intend to bring a new specific product to market before they ask consumers to contribute their ideas and input according to the provided outlined idea for this new product. Exemplary study samples are dm Drogeriemarkt or Manhattan. In both cases, the company has initiated a concrete idea for a new product. Afterwards, customers had the opportunity to contribute their ideas and significantly co-design the product (in terms of color, packaging, scent etc.)

The next applicable stage is product development, which is according to the literature analysis company dominated with only limited potential for consumer involvement and co-creation activities. First and foremost, new product development describes the physical production based on the developed concept. Researchers also include the testing of the product during this stage since customers' product use-experience, individual opinions might provide valuable ideas for improvement and modifications that still can be incorporated during the product development process. However, for the purpose of this study, the scope of the term product development based on the existing literature analysis will be extended. The extension mainly concerns the consideration of mass customization as a form of consumer co-creation in the study conducted within this paper. Mass customization is characterized by the individualization of an already existing product. Thus, according to the NPD process as it is discussed in the scientific literature, the eight stages (according to Kotler 2012) are already completed before consumers become involved. Since mass customization is known to be the production of a custom-made product, a significant scope of the product development is seen with the customer, despite the physical production that is undertaken by the manufacturing company. Hence, this extension can be explained and justified particularly based on the product configuration that is entirely done by the customers and considered to make the main part of new product development in the case of mass customization. The most prominent example among the sample size for the combination of mass customization and new product development is Adidas with their configuration program miAdidas. Finally, the last stage that is relevant for the evaluation of the study among the key criterion "stages in the NPD process" is test marketing. Usually test marketing is done after a first launch into a realistic setting. Companies invite customers to test the respective product and make a contribution for improvements and potential modifications based on their opinion. The theoretical definition finds practical application onto the study samples therefore no adaptations must be made.

In summary, in the course of the evaluation of the study, two relevant stages were slightly adapted or extended, namely, concept development and testing and product development. Idea generation and test marketing could be applied according to the theoretical definition.

Among all 40 study samples the majority of consumer co-creation activities (15), take place during the concept development and testing stage. In the event of a limitation to only one stage two samples were found during the idea generation stage, nine samples during the product development stage and six during the test marketing. Apart from that, there are some examples in which the co-creation activity cannot be specifically assigned to one single stage. Instead consumers are involved during several stages. Consequently, results present five samples where consumers can engage in co-creation activities during the idea generation and the concept development stage. Furthermore, one example was found for the customers' involvement during the idea generation, concept development and testing, and test marketing stage; the idea generation and concept development and testing stage; as well as the concept development and testing and product development stage. (see figure 17)



**Figure 17: Key criterion “stages in the NPD process” distributed among the sample**

Source: own illustration

## **4.5 Results and Discussion**

As described in the section Data in chapter 4.2 Methodology, four main key criteria were identified, which items are compared and analyzed with all items of the other key criteria. Two key criteria, respectively, of the total selected four main criteria were further divided into practical- and theoretical relevance.

At the beginning, the first key criterion with practical relevance, i.e. industry, will be compared with all items of all key criteria.

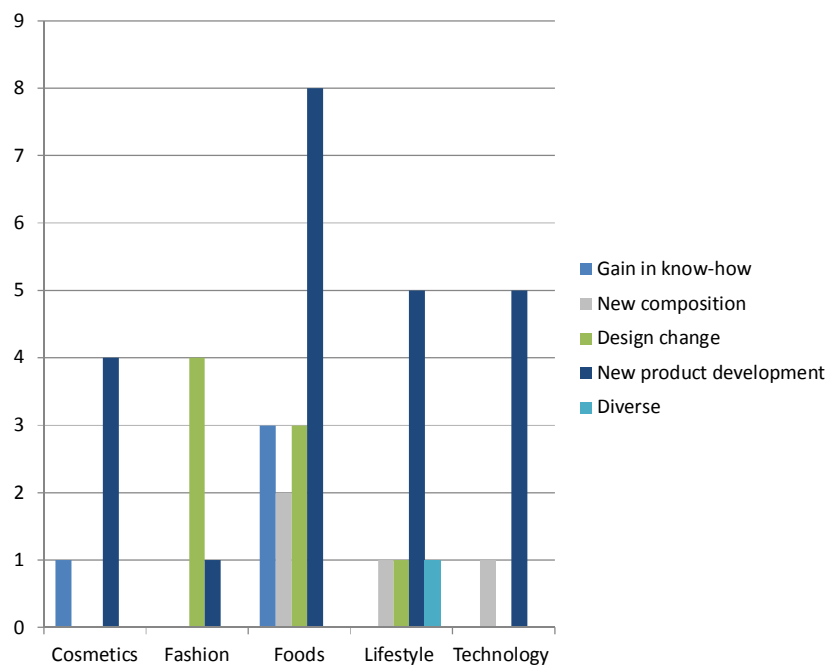
### **4.5.1 Industry and concept**

According to the first key criteria of practical relevance, this section will start with the evaluation of industry and concept (see figure 18). As has been discussed in chapter 4.3.3, the following four concepts have been defined based on their practical relevance in the study: gain in know-how, new composition, design change, and new product development.

Beginning with the cosmetics industry it can be said that 80 % (i.e. four out of five samples) apply the concept of new product development, while the remaining 20 % (i.e. one out of five samples) use the co-creation activities to gain know-how. It should also be mentioned that this industry is the only one where all five samples were found in the D-A-CH region. For the following four industries at least one sample was always found in Europe (excl. D-A-CH). As regards the fashion industry, 80 % (i.e. four out of five samples) use the concept of design change and 20 % (i.e. one out of five samples) apply the concept of new product development. In contrast to the first two industries, whose overall sample size is the smallest consisting of only five corporations, especially the foods industry is much more diversified when it comes to the concepts applied. Half of the companies (i.e. eight out of 16 samples) use the concept of new product development. Respectively 18.75 % (i.e. three out of 16 samples) use design change and gain in know-how and 12.5 % (i.e. two out of 16 samples) apply the approach of new composition. To continue with the lifestyle industry, the majority of the corporations, namely 62.5 % (i.e. five out of eight samples) apply new product development. Each one of the remaining three samples, which makes a share of 12.5 % each (i.e. one out of eight



samples) uses new composition, design change and in one case a diverse concept. Finally, the technology industry applies to a major part of 83.33 % (i.e. five out of six samples) of the concept of new product development. The remaining 16.67 % (i.e. one out of six samples) comprises of the application of the new composition approach. The technology industry is the only one where the sample size between the D-A-CH region and Europe (excl. D-ACH) is balanced. Thus, three samples were found in the D-A-CH region, and three samples in Europe (excl. D-ACH).



**Figure 18: Analysis of the key criteria industry and concept**

Source: own illustration

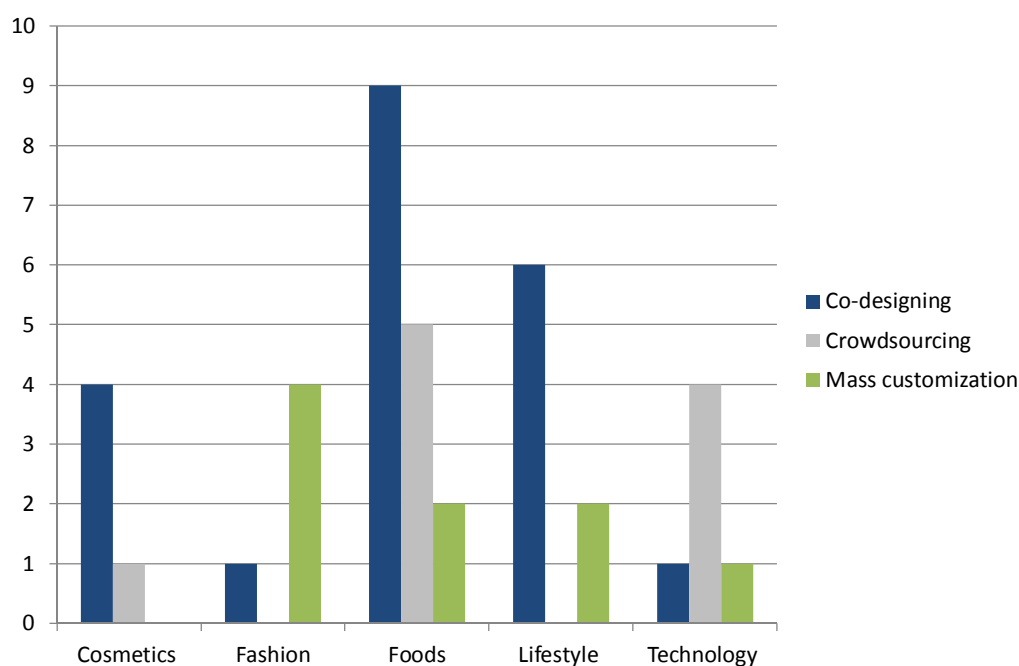
Due to the lack of information about the corporations' decision making process concerning the selection of the applied concept, no interpretations can be made with reference to the relationship between industry and concept. On the basis of these two static key criteria, no correlations are recognizable.

#### 4.5.2 Industry and form

As has been discussed in great detail in chapter 3.3, there are the following three forms of consumer co-creation: crowdsourcing, mass customization, and co-designing. For the

purpose of the explanation of the model taken as a basis for the study, these were briefly mentioned in chapter 4.3.4.

The industry cosmetics uses in 80 % (i.e. four out of five samples) of the cases co-designing and in 20 % (i.e. one out of five samples) crowdsourcing. At this point, it is particularly noteworthy that in all cases of co-designing, the concept of new product development is applied. This correlation can be explained by the companies' aim to create a new product line. Co-designing allows consumers to design new products (in terms of color, name, packaging, scent, etc) based on already existing products. In the fashion industry the great majority, namely 80 % use mass customization and 20 % percent co-designing. As in all cases of mass customization, the concept of design change is applied; this leads to the conclusion that this correlation presents the personalization and individualization of already existing products. Thus, the link between mass customization and design change allows the assumption that companies aim to discover future trends derived from the sales of the individualized products. The foods industry uses in 56 % of all cases (i.e. nine out of 16 samples) co-designing, in 31 % (i.e. five out of 16 samples) crowdsourcing, and to a minor part, namely 13 % (i.e. two out of 16 samples) mass customization. Similar to the cosmetics industry, there is a strong correlation between co-designing and new product development.



**Figure 19: Analysis of the key criteria industry and form**

Source: own illustration

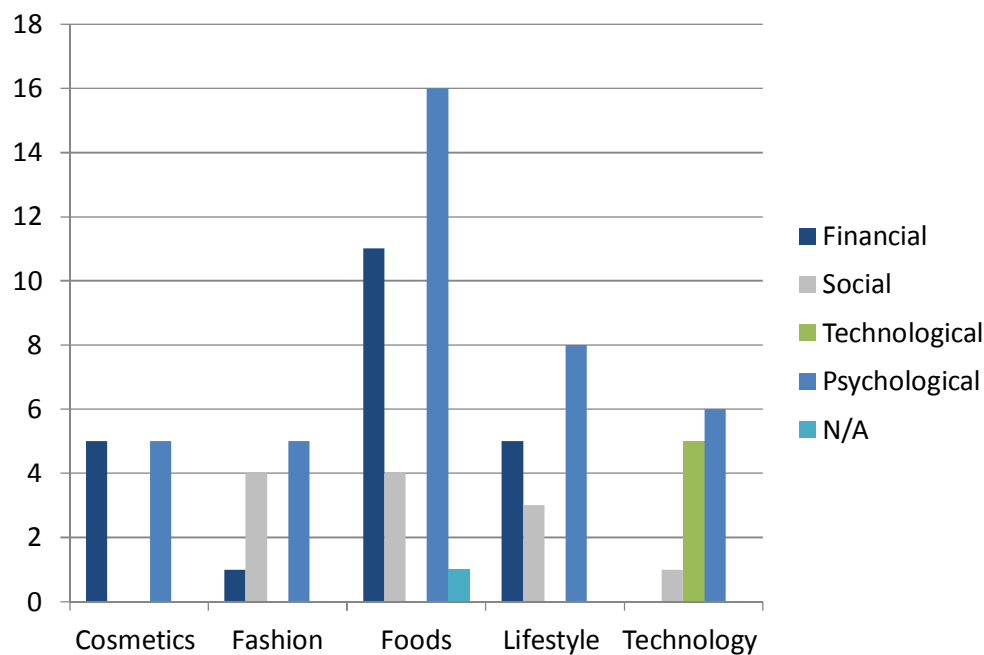
As co-designing has the highest degree of consumer involvement as well as the highest degree of customer contribution to the NPD process (see figure 7) this correlation matches the fact that new product development is the form with the highest consumer impact among all concepts, in terms of a product development for the general public. As in the cosmetics industry, the foods industry refers with the form of crowdsourcing to gain in know-how. This suggests that crowdsourcing allows the most direct access to consumer inputs, based on their opinions, possible reviews, innovative suggestions and ideas. The lifestyle industry shows very similar proportions as the fashion industry. 75 % (i.e. six out of eight samples) use co-designing, again in accordance with a major part concerning the new product development concept, and 25 % apply mass customization. The Technology Industry shows deviations particularly in the use of crowdsourcing in 66.67 % of all cases (i.e. four out of six samples). In contrast to the statement that crowdsourcing refers to gain in know-how (as in the industry cosmetics and foods), all four cases of crowdsourcing in the technology industry follow the concept of the new product development. This fact leads to the assumption that companies involve consumers' input in their technological research and development. Hence, consumers' contribute through their personal know-how, experience, and innovative ideas to a new product development in the technological industry. The remaining 33.33 % are divided into 16.67 % (i.e. one out of six samples) co-designing and 16.67 % (i.e. one out of six samples) mass customization. (see figure 19)

#### **4.5.3 Industry and incentive**

As has already been extensively discussed in chapter 3.4.2 and also outlined in chapter 4.3.5, psychological incentives are prerequisite in all study samples as they are the decisive factor whether to engage in co-creation activities or not. Therefore, the analysis between industry and incentive is limited to financial, social and technological incentives (see figure 20).

The cosmetics industry is characterized by 100 % (i.e. five out of five samples) financial incentives. Furthermore, in the fashion industry 80 % (i.e. four out of five samples) are social incentivized and 20 % (i.e. one out of five samples) is financial incentivized. The foods industry has a major share of 68.75 % (i.e. eleven out of 16 samples) that is

financial incentivized, 25 % (i.e. four out of 16 samples) that social incentivized and 6.25 % (i.e. one out of 16 samples) where no respective information has been found. The lifestyle industry is characterized by 62.5 % (i.e. five out of eight samples) financial incentives and 37.5 % (i.e. three out of 8 samples) social incentives. Finally, the technology industry has technological incentives to a major extent of 83.33 % (i.e. five out of six samples). The remaining 16.67 % (i.e. one out of six samples) is social incentivized. Based on these results it can be concluded that except for the fashion- and the technology industry all industries are characterized by a significantly large part in financial incentives. With regard to the fashion industry, the high share of social incentives can be plausibly explained by the correlation of mass customization and social incentives. This relation clearly indicates the individualization of products for the consumers themselves (also referred to as creator in the study framework). Corporations usually offer their customers' an all encompassing configuration system that allows them to co-design products according to their personal preferences and needs. Hence, it is comprehensible that companies do not place additional financial incentives in the event of product customizations.



**Figure 20: Analysis of the key criteria industry and incentive**

Source: own illustration

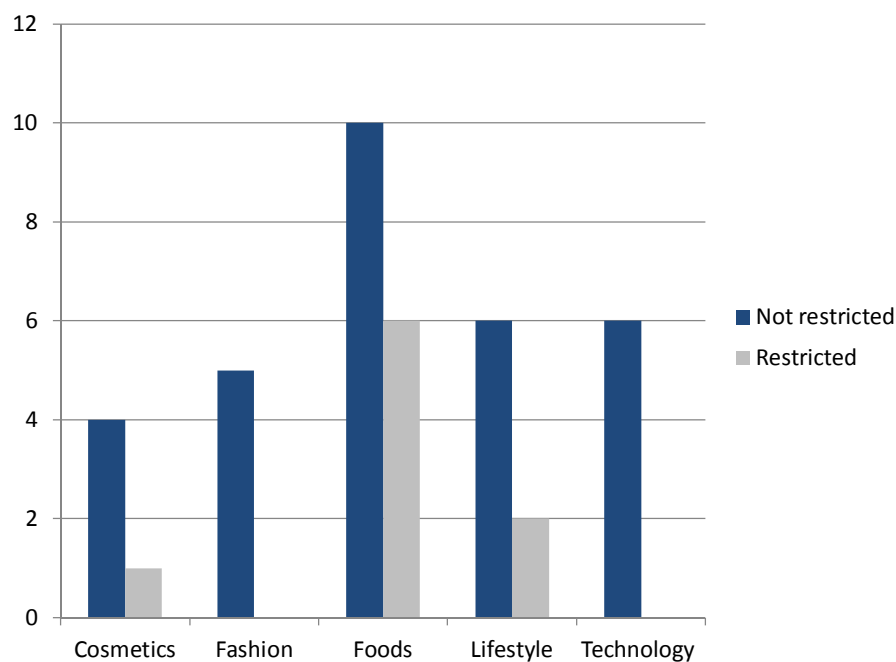
With regard to the technology industry, it is verifiable that technological incentives predominate financial as well as social incentives due to the specific technologically personal knowledge that is contributed to the product development.

Overall, it is interesting that across all industries most of the financial incentives (i.e. 22 in total) correlate with co-designing (i.e. 16 out of 22 samples) and new product development (i.e. 14 out of 16 samples). Concerning the social incentives (i.e. twelve in total), it is noteworthy that all nine samples of mass customization are among them.

#### **4.5.4 Industry and target group**

Generally, a target group can be restricted or not restricted. In case of a not restricted target group all people who want to, can participate without any limitations. As has been discussed in great detail in chapter 4.3.6, a restricted target group can either be derived from the companies' conditions of participation or due to the product's nature. Based on this theoretical distinction, figure 21 clearly shows an obvious tendency towards not restricted target groups. To begin with the cosmetics industry, 80 % (i.e. four out of five samples) have a not restricted target group, and only 20 % (i.e. one out of five samples) have a restricted target group. The fashion industry has 100 % (i.e. five out of five samples) not restricted target group. A percentage share of 62.5 % (i.e. ten out of 16 samples) of a not restricted target group dominates the foods industry. The remaining 37.5 % (i.e. six out of 16 samples) have a restricted target group. In the lifestyle industry 75 % (i.e. six out of eight samples) of the target groups are not restricted, and 25 % (i.e. two out eight samples) are restricted. Same as in the fashion industry, 100 % (i.e. six out of six samples) of the target groups are not restricted in the technology industry. Based on these results, it can be concluded that companies allow for any form of creativity and especially for any type of input and new ideas. This however, could lead to a more complex and a more extensive process concerning the idea screening and implementation of ideas. Additionally, it should be pointed out that all nine examples of mass customization are among the not restricted target groups. Referring to the restricted target groups, it can be assumed, that the company follows an objective, which shall be attained through the co-creation activity that has been more clearly and precisely defined already in advance. It is interesting that there is a correlation with crowdsourcing

and gain in know-how in most cases of the restricted target groups. This indicates that companies want to improve an already existing product with the help of the users' opinions, personal experiences and suggestions for improvement. In this context, the restriction of the target group might refer to group of users of the respective product.



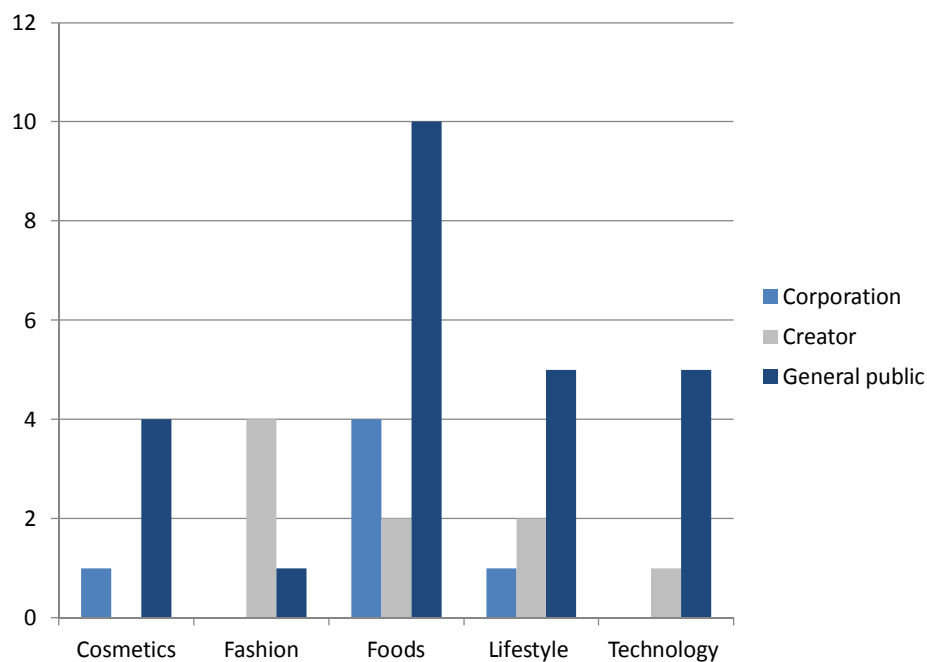
**Figure 21: Analysis of the key criteria industry and target group**

Source: own illustration

#### 4.5.5 Industry and use of the product

As has already been pointed out in chapter 4.3.7, a distinction is made regarding the use of product between the corporation, the creator and the general public. The cosmetics industry is characterized by 80 % (i.e. four out of five samples) use of the product for the general public and 20 % (i.e. one out for five samples) for the corporation. The fashion industry presents exactly the opposite, namely 20 % (i.e. one out of five samples) for the corporation and 80 % (i.e. four out of five samples) for the creator. The food- and the lifestyle industry are similarly distributed. Both industries show all three items, corporation, creator and the general public. In both industries, 62.5 % (i.e. in the foods industry ten out of 16 samples; in the lifestyle industry five out of eight samples) represent the general public. Furthermore, the foods industry is characterized by 25 %

(i.e. four out of 16 samples) use of the product by the corporation and 12.5 % (i.e. two out of 16 samples) for the creator. In contrast the remaining shares in the lifestyle industry represent the proportion vice versa. Hence, 25 % (i.e. two out of eight samples) are for the use of the product by the creator and 12.5 % (i.e. one out of eight samples) for the corporation. The technology industry represents 83.33 % (i.e. five out of six) for the general public and only 16.67 % (i.e. one out of six samples) for the creator.



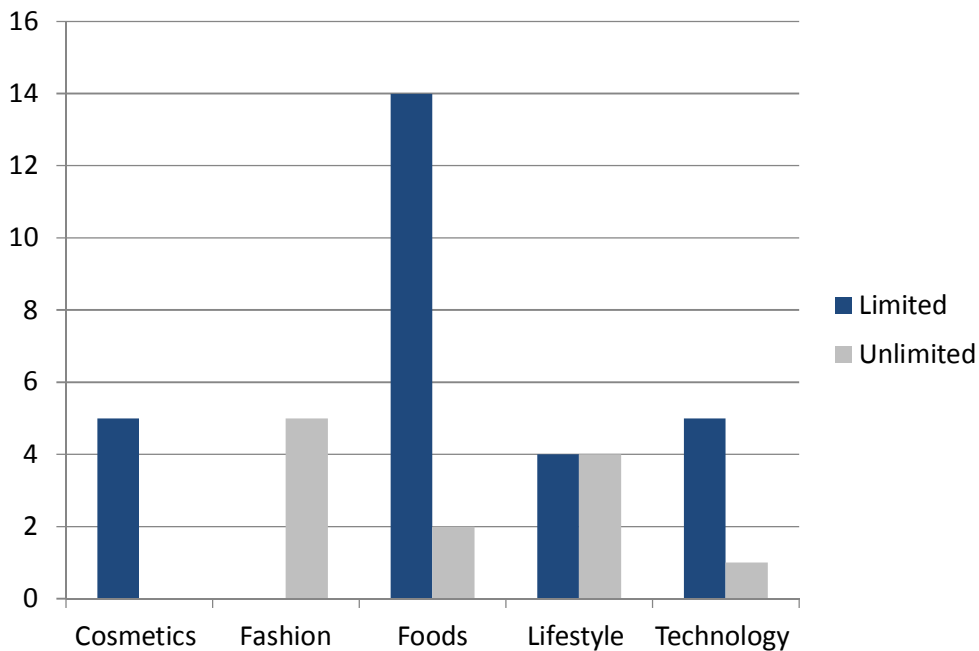
**Figure 22: Analysis of the key criteria industry and target group**

Source: own illustration

As can be seen in figure 22, all industries have their peak in the use of the product for the general public except for the fashion industry where most products are for the creators themselves. This can be explained on the basis of a correlation with mass customization, where consumers individually co-design their personalized products. Furthermore, it should be pointed out that without any exception all nine samples of mass customization are for the use of the creator. With reference to the corporation the majority of the samples size uses crowdsourcing as co-creation form, which is again positively related to gain in know-how. Finally, it is striking that a significantly high part of samples aimed for the use of the product for the general public correlates with co-designing and new product development.

#### 4.5.6 Industry and timeframe

Following the definition of the key criterion timeframe in chapter 4.3.8 it can be distinguished between limited and unlimited timeframes. While the cosmetics industry is characterized by a 100 % (i.e. five out of five samples) limitation in time, the fashion industry represents the opposite, namely 100 % (i.e. five out of five samples) unlimited in time. Especially the results from the fashion industry can be derived from a correlation with mass customization. Since mass customization is characterized by a configuration system provided by the firms that allows customers to co-design their personalized products, this samples cannot be classified as co-creation projects in the proper sense (i.e. with a specific start- and end date). Rather it can be considered to be part of their product and sales strategy, in which co-creation is conceptually integrated. The foods industry shows a major part of limited time frames, namely 87.5 % (i.e. 14 out of 16 samples) and only 12.5 % (i.e. two out of 16 samples) are unlimited in time. Interestingly, the shares between limited and unlimited are equal in the lifestyle industry. Hence, 50 % (i.e. four out of eight samples) are limited and 50 % (i.e. four out of eight samples) are unlimited in time.



**Figure 23: Analysis of the key criteria industry and timeframe**

Source: own illustration



Finally, the technology industry represents 83.33 % (i.e. five out of six samples) limited in timeframe and 16.67 % (i.e. one out of five samples) unlimited in timeframe. (see figure 23)

As already mentioned with regard to the incentives, the target group, and the use of the product, mass customization stands out in the sense that all nine respective samples are unlimited in time. The samples that are limited in time indicate a co-creation project. These are correlated with co-designing and crowdsourcing, general public and corporation, as well as new product development and gain in know-how.

#### **4.5.7 Industry and stages in the NPD process**

As has been broadly discussed in chapter 2, the NPD process plays a vital role in the context of consumer co-creation. After having analyzed three different models by Kotler (2012), Cooper (2008) and Hoyer et al. (2010), Kotler's model of the eight stages in the NPD process serves as a basis for the study evaluation. More specifically from a practical perspective, the following four stages are applied in the study: idea generation (stage 1), concept development and testing (stage 3), product development (stage 6) and test marketing (stage 7). The respective derivation and summary of the theoretical analysis have been emphasized in chapter 2.3 as well as 4.3.9.

Figure 24 shows the distribution of the stages within all five industries:

##### Cosmetics:

80 % (i.e. four out of five samples)	concept development and testing
20 % (i.e. one out of five samples)	test marketing

##### Fashion:

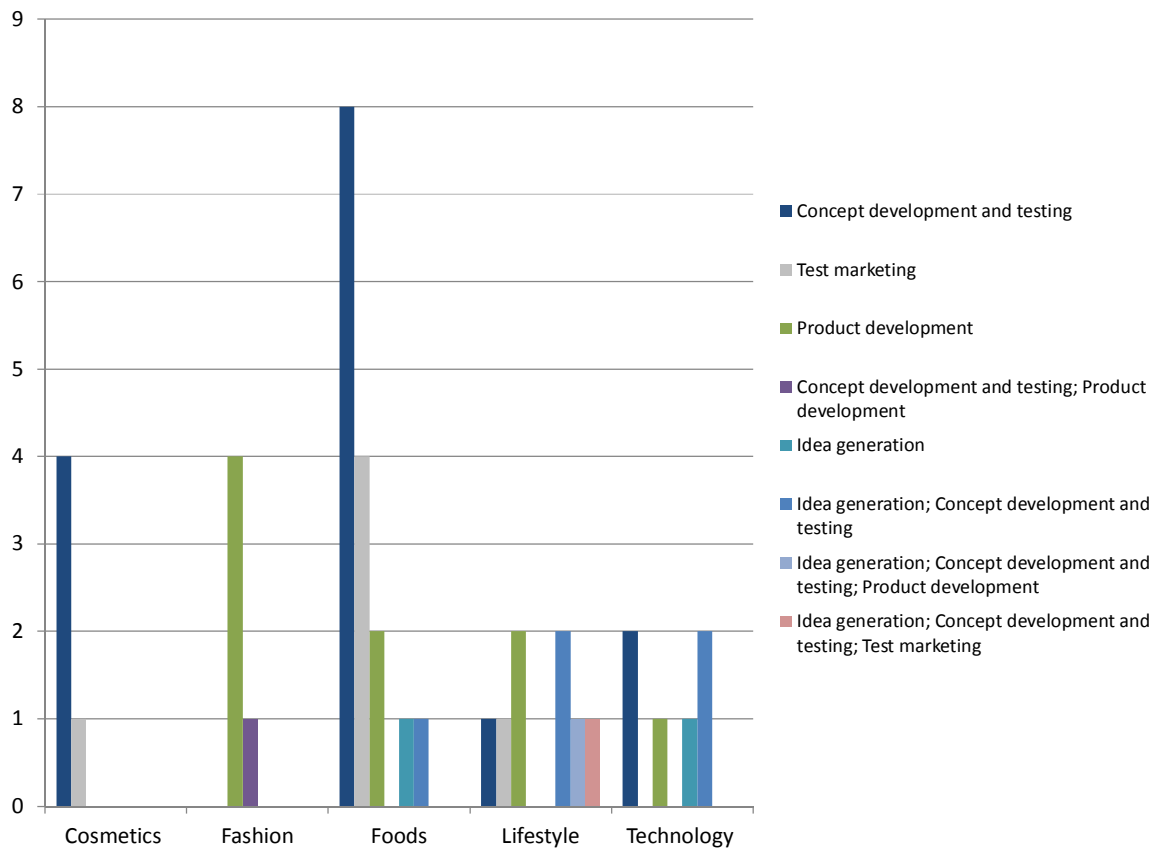
80 % (i.e. four out of five samples)	product development
20 % (i.e. one out of five samples)	concept development and testing; product development

##### Foods:

50 % (i.e. eight out of 16 samples)	concept development and testing
25 % (i.e. four out of 16 samples)	test marketing
12.5 % (i.e. two out of 16 samples)	product development
6.25 % (i.e. one out of 16 samples)	idea generation

6.25 % (i.e. one out of 16 samples)

idea generation; concept development and testing



**Figure 24: Analysis of the key criteria industry and stages in the NPD process**

Source: own illustration

#### Lifestyle:

25 % (i.e. two out of eight samples)

idea generation; concept development and testing

25 % (i.e. two out of eight samples)

product development

12.5 % (i.e. one out of eight samples)

concept development and testing

12.5 % (i.e. one out of eight samples)

idea generation; concept development and testing; product development

12.5 % (i.e. one out of eight samples)

idea generation; concept development and testing; test marketing

12.5 % (i.e. one out of eight samples)

test marketing

#### Technology:

33.33 % (i.e. two out of six samples)

concept development and testing

33.33 % (i.e. two out of six samples)	idea generation; concept development and testing
16.67 % (i.e. one out of eight samples)	idea generation
16.67 % (i.e. one out of eight samples)	product development

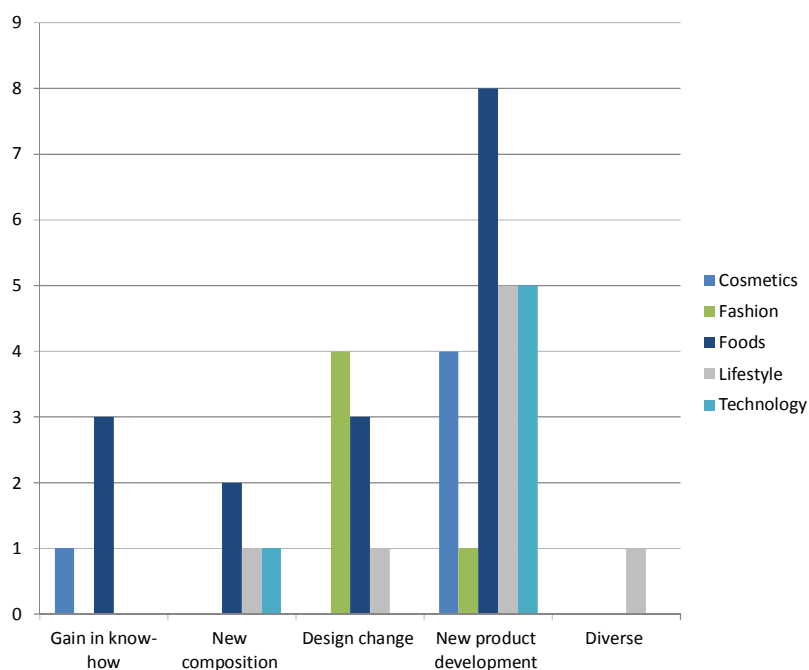
The cosmetics industry shows a clear majority in concept development and testing, which positively correlates with co-designing and new product development. The significant share of 80 % of product development in the fashion industry can be explained by the fact that all mass customization activities were classified as a part of product development. Hence, the results show a match between product development and mass customization across all industries. In other words, all samples of product development correspond to all cases of mass customization. Half of the co-creation activities in the foods industry take place during the concept development and testing stage. Similar to the cosmetics industry there is a correlation with co-designing and new product development. The lifestyle industry indicates no trends. Instead, all four stages are represented. Furthermore, the lifestyle industry is the one industry, where the most combinations of several stages can be found. The technology industry is dominated by the concept development and testing stage and closely followed by activities during the idea generation stage. Surprisingly, the concept development is positively correlated with new product development, but in contrast to the cosmetics and the fashion industry not with co-designing but with crowdsourcing. Only a minor part is contributed during the product development stage.

Overall, most samples (i.e. 37.5 %) were identified during the concept development and testing stage (i.e. 15 out of 40), and have a strong correlation with co-designing and new product development. The close relation between the concept development and testing stage and co-designing corresponds to the fact that co-designing ranks highest in both the degree of consumer involvement and the degree of customer contribution to the NPD process (see figure 7). Respectively, this meets the way Albinsson et al. (2007) characterize co-designing, namely by making customers constructive contributors in the NPD process. (Albinsson et al. 2007, p. 980) As regards the additional correlation with the new product development, it is evident that co-creation activities aim in most cases to create a new product in terms of product extension or -alteration.

Next, the second key criterion of practical relevance, namely concept, will be compared with all items of all key criteria. Basically, all relevant information with reference to the four established concepts (i.e. gain in know-how, new composition, design change, and new product development) are explained in chapter 4.3.3.

#### 4.5.8 Concept and industry

The analysis of concept and industry is analogous to the analysis of industry and concept. Only the graphical illustration is different. Hence the different concepts are distributed among the industries as follows (see figure 25): 75 % (i.e. three out of four samples) of gain in know were found in the foods industry, and 25 % (i.e. one out of four samples) were found in the cosmetics industry. It is worth mentioning, that all samples of gain in know-how use the form of crowdsourcing. With reference to new composition, half of the samples (i.e. two out of four) are within the foods industry and 25 % (i.e. one out of four samples) each in the lifestyle- and the technology industry. Design change occurs to 50 % (i.e. four out of eight samples) in the fashion industry, 37.5 % (i.e. three out of eight samples) in the foods industry, and the remaining 12.5 % (i.e. one out of eight samples) in the lifestyle industry. Both, the majority of design change samples and new composition samples use the form of mass customization. New product development occurs to 80 % (i.e. eight out of ten samples) in the foods industry, 40 % (i.e. four out of ten samples) in the cosmetics industry, 10 % (i.e. one out of ten samples) in the fashion industry, 50 % (i.e. five out of ten samples) in the lifestyle industry, and 50 % (i.e. five out of ten samples) in the technology industry. The remaining 10 % (i.e. one out of ten samples) of new product development samples use the form of mass customization. Both, the majority of new product development samples and design change samples use the form of mass customization.



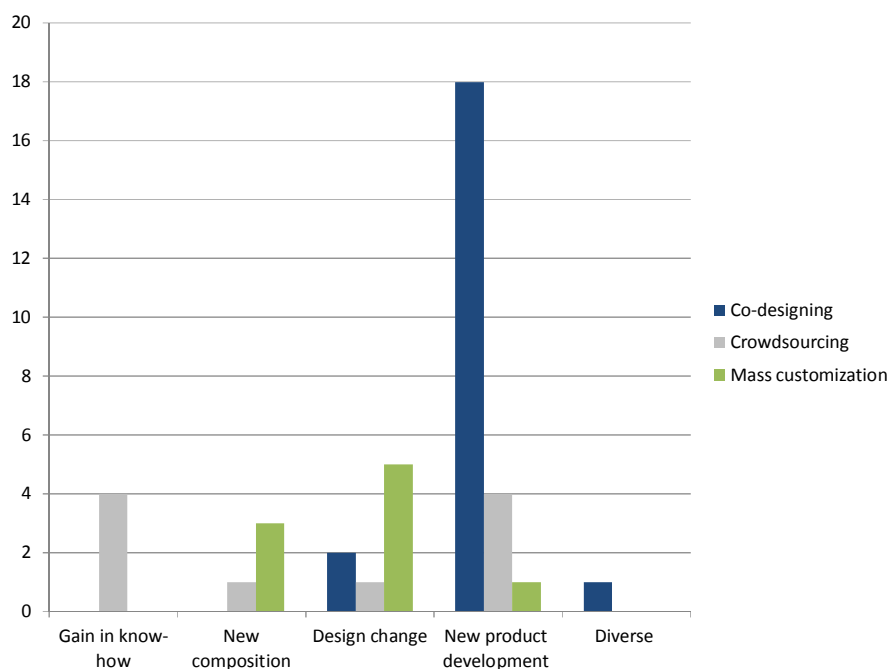
**Figure 25: Analysis of the key criteria concept and industry**

Source: own illustration

The concept of new product development is dominated with a share of 34.8 % (i.e. eight out of 23 samples) in the foods industry. The lifestyle- and the technology industry, both have a share of 21.7 % (i.e. five out of 23 samples). 17.4 % (i.e. four out of 23 samples) were found in the cosmetics industry and finally 4.4 % (i.e. one out of 23 samples) occurs in the fashion industry. It is evident that the vast majority of new product development samples use co-designing for their co-creation activities. Additionally, one sample of the lifestyle industry could not be assigned to a specific concept.

#### 4.5.9 Concept and form

With respect to the relation between the concept and the used form of co-creation the following results were found (see figure 26): Gain in know-how uses in 100 % (i.e. four out of four samples) crowdsourcing. This can be explained by the fact that companies gather customers' novel ideas, opinions and personal experiences through crowdsourcing methods in order to gain insights and transfer it accordingly to their know-how. New composition shows 75 % (i.e. three out of four samples) mass customization and 25 % (i.e. one out of four samples) crowdsourcing.



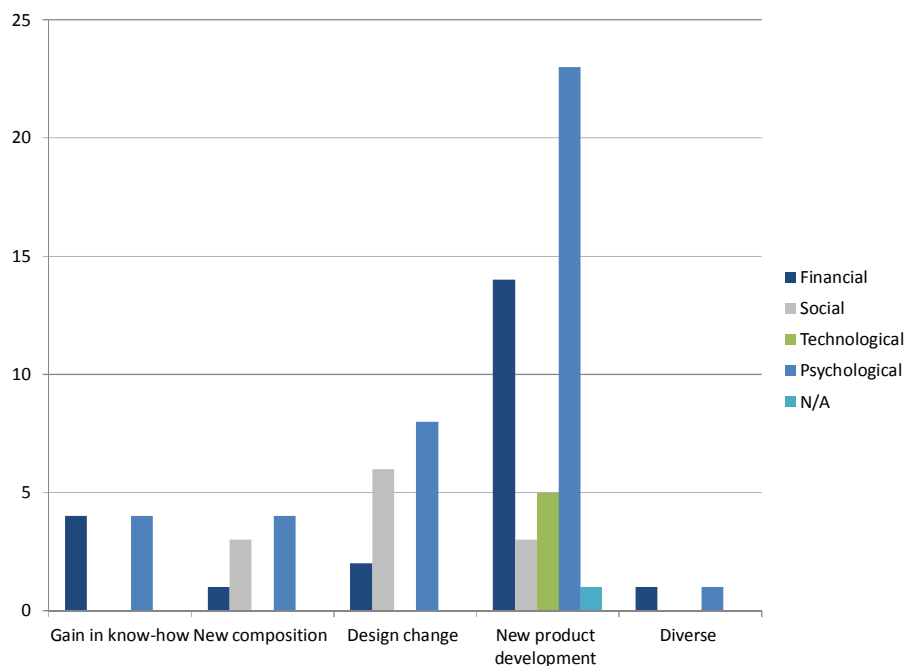
**Figure 26: Analysis of the key criteria concept and form**

Source: own illustration

Design change is dominated by mass customization too which can be seen at a share of 62.5 % (i.e. five out of eight samples). 25 % (i.e. two out of eight samples) represent co-designing and 12.5 % (i.e. one out of eight samples) crowdsourcing. Finally, new product development is clearly dominated by co-designing with a share of 78.3 % (i.e. 18 samples out of 23). Furthermore, 17.4 % (i.e. four out of 23) use crowdsourcing and only 4.3 % (i.e. one out of 23) uses mass customization. The one sample that could not be assigned to one of the four concepts uses co-designing.

#### 4.5.10 Concept and incentive

Overall the relation between concept and incentive is dominated by the prevalence of financial and social incentives. The way they are distributed among the various concepts is shown in figure 27. Gain in know-how is to 100 % (i.e. four out of four samples) financial incentivized. In contrast, new composition is dominated by social incentives with a share of 75 % (i.e. three out of four samples). The remaining 25 % (i.e. one out of four samples) represent financial incentives.



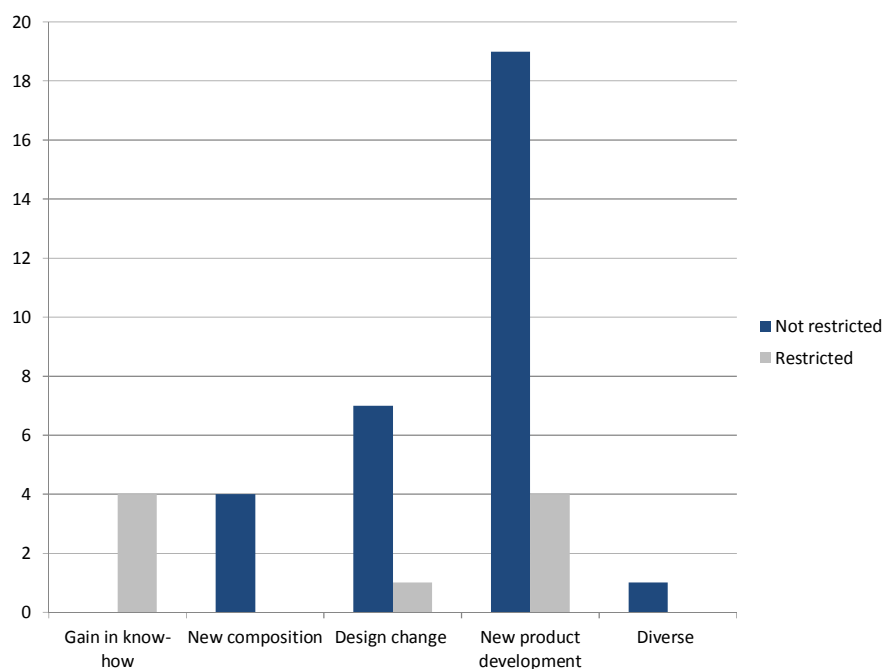
**Figure 27: Analysis of the key criteria concept and incentive**

Source: own illustration

The exact same distribution is presented in case of design change. Thus, 75 % (i.e. six out of eight samples) represent social incentives and 25 % (i.e. two out of eight samples) financial incentives. In the case of new product development all three kinds of incentives are represented. A share of 60.9 % (i.e. 14 out of 23 samples) presents financial incentives, 21.8 % (i.e. five out of 23 samples) technological incentives, 13 % (i.e. three out of 23 samples) social incentives and the one sample where no specific concept could be assigned shows financial incentives too.

#### 4.5.11 Concept and target group

The relation between concept and target group is characterized by a significant prevalence of not restricted target groups. The distribution among the various concepts is as follows (see figure 28): Gain in know-how shows that 100 % (i.e. four out of four samples) have not restricted target groups. In contrast, new composition demonstrates the opposite, namely 100 % (i.e. four out of four samples) restricted target groups.



**Figure 28: Analysis of the key criteria concept and target group**

Source: own illustration

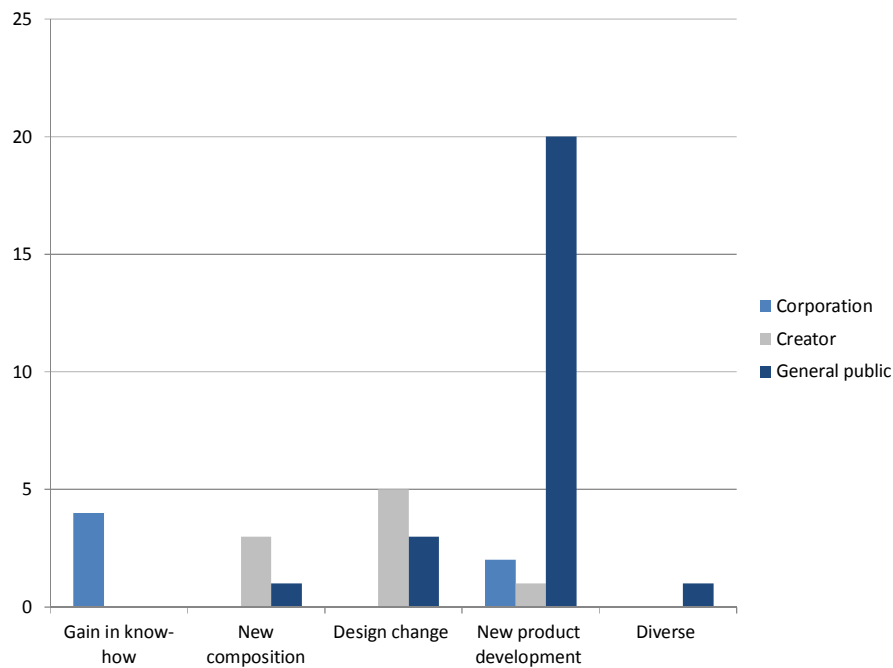
Furthermore, also design change and new product development have a vast majority of not restricted target groups. Thus, design change represents a share of 87.5 % (i.e. seven out of eight samples) in not restricted target groups and new product development a slightly smaller share of 82.6 % (i.e. 19 out of 23 samples). Restricted target groups occur in 12.5 % (i.e. one out of eight samples) with reference to design change, and in 17.4 % (i.e. four out of 23 samples) with reference to new product development. The one sample where no specific concept could be assigned has a not restricted target group too.

Especially the restricted target groups indicate that companies want and require specific know-how and personal experience from the users of a particular product. This is evidently shown by the fact that all cases of gain in know-how have a restricted target group. In the case of new product development it can be assumed that companies require experts with specific qualifications for their co-creation activities.

#### **4.5.12 Concept and use of the product**

As can be seen in figure 29 the general public has the biggest total share of the key criterion use of the product across all concepts. However, gain in know-how is characterized by 100 % (i.e. four out of four samples) of the use of co-creation activity for the corporation. This positive correlation is reasonable due to the fact that companies aim to gather valuable customer information for their product development, improvements etc. With regard to new composition 75 % (i.e. three out of four samples) are for the creators themselves, which matches the applied form of mass customization in all cases. 25 % (i.e. one out of four samples) is for the general public. As regards design change, the majority, namely 62.5 % (i.e. five out of eight samples), is for the creators themselves. Similar to the correlation of new composition and creator, also mass customization is applied as a form of design change. The remaining 37.5 % (i.e. three out of eight samples) are for the general public. Interestingly, 87 % (i.e. 20 out of 23 samples) are for the general public in case of new product development, which also correlates with co-designing as the most applied form. Only 8.6 % (i.e. two out of 23 samples) are for the corporation and 4.4 % (i.e. one out of 23) is for the creator.



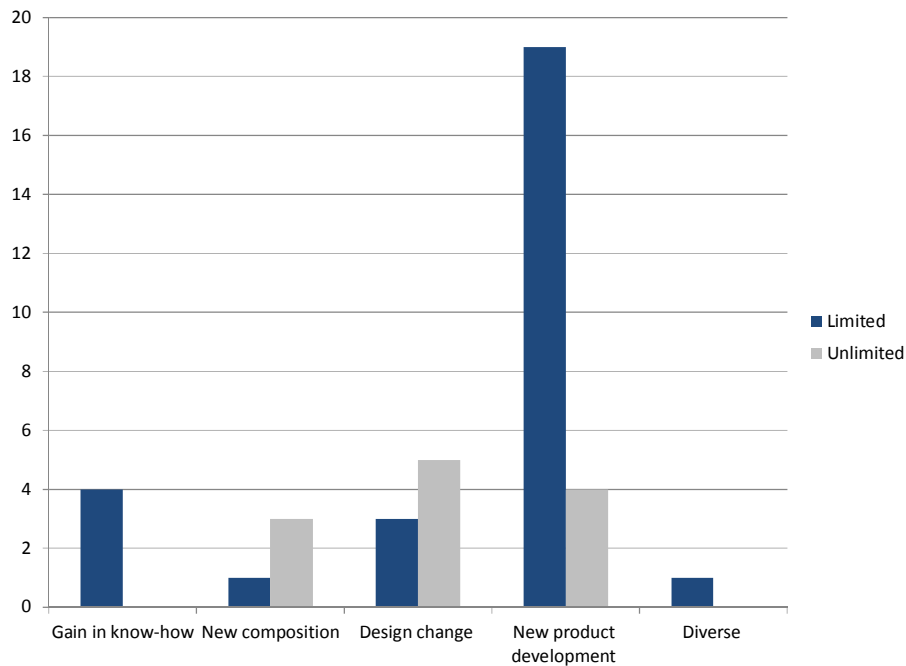


**Figure 29: Analysis of the key criteria concept and use of the product**

Source: own illustration

#### 4.5.13 Concept and timeframe

Overall, the relation between concept and timeframe is dominated by the prevalence of a limited timeframe in the co-creation projects (see figure 30). To begin with gain in know-how, 100 % (i.e. four out of four samples) have a limited timeframe. Also, new product development has a significant share of 82.6 % (i.e. 19 out of 23 samples) that refers to a limited time frame. Only 17.4 % (i.e. four out of 23 samples) have an unlimited timeframe. The one sample that was not assigned to one of the four concepts presents a limited timeframe as well. In contrast, new composition and design change show a dominating part of unlimited timeframes. 75 % (i.e. three out of 4 samples) of new composition and 62.5 % (i.e. five out of 8 samples) have an unlimited timeframe. This can be explained on the basis of a correlation with the form of mass customization, which is not considered to be a particular co-creation project but rather is an ongoing part of a product and sales strategy. The share of limited timeframes amounts to 25 % (i.e. one out of four samples) in the case of new composition and 37.5 % (i.e. three out of eight samples) in the case of design change. Generally, it can be said that all cases having a limited timeframe indicate a specific co-creation project including a specific outcome or aim, guided by the corporation.



**Figure 30: Analysis of the key criteria concept and timeframe**  
Source: own illustration

#### 4.5.14 Concept and stages in the NPD process

As can be seen in figure 31 the distribution of the relation between concept and stages in the NPD process is as follows:

##### Gain in know-how:

100 % (i.e. four out of four samples)      test marketing

##### New composition:

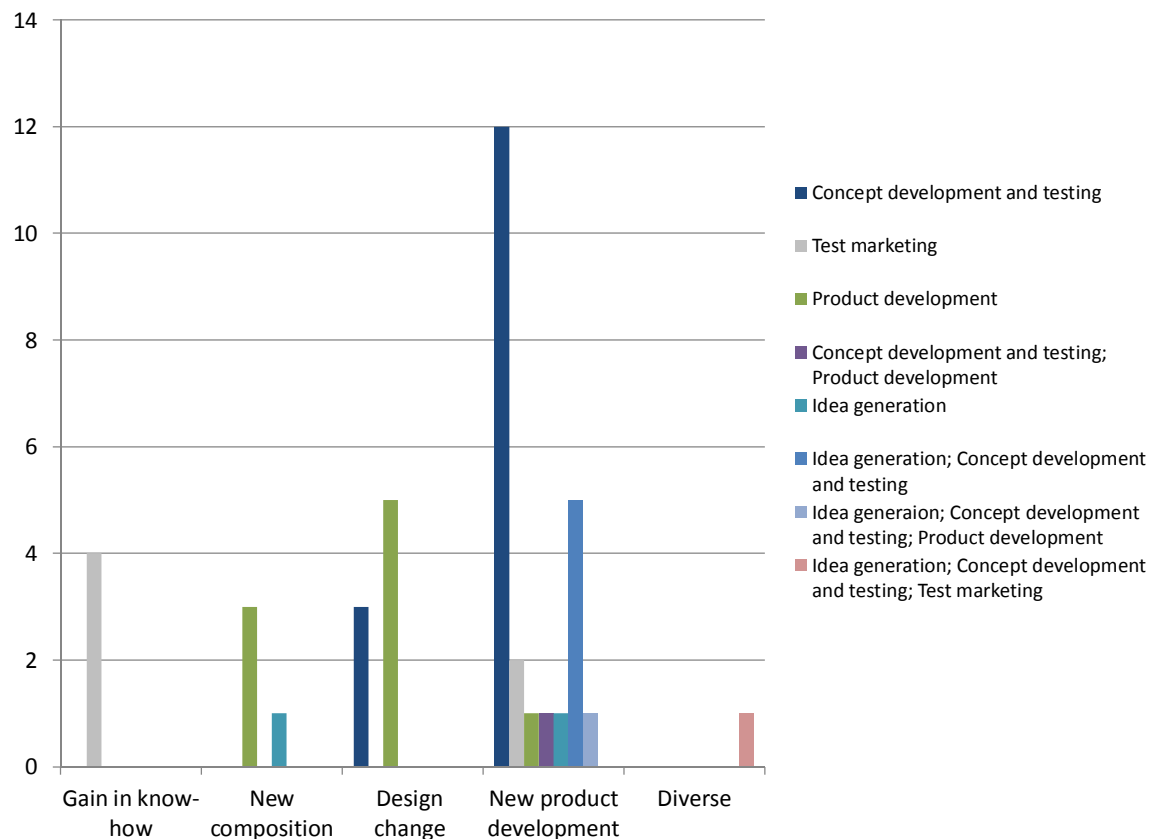
75 % (i.e. three out of four samples)      product development

25 % (i.e. one out of four samples)      Idea generation

##### Design change:

62.5 % (i.e. five out of eight samples)      product development

37.5 % (i.e. three out of eight samples)      concept development and testing



**Figure 31: Analysis of the key criteria concept and stages in the NPD process**

Source: own illustration

#### New product development:

52 % (i.e. twelve out of 23 samples)	concept development and testing
21.8 % (i.e. five out of 23 samples)	idea generation; concept development and testing
8.6 % (i.e. two out of 23 samples)	test marketing
4.4 % (i.e. one out of 23 samples)	idea generation
4.4 % (i.e. one out of 23 samples)	idea generation; concept development and testing; product development
4.4 % (i.e. one out of 23 samples)	concept development and testing; product development
4.4 % (i.e. one out of 23 samples)	product development

#### Diverse:

100 % (i.e. one out of one sample)	idea generation; concept development and testing; test marketing
------------------------------------	--

The concept gain in know-how represents 100 % of the co-creation activities in the test marketing stage, which positively correlates with the fact that companies aim to gather users' experience and know-how about already existing products for a potential adaptation or even extension. New composition and design change are dominated by product development, which shows a relation to the form of mass customization. New product development represents a major share in concept development and testing. In various cases the first stage idea generation occurs in a combination with concept development and testing. In most of these cases co-designing is the used form of co-creation activities. For the remaining stages and combination of multiple stages, which make only minor parts, no trends can be noted.

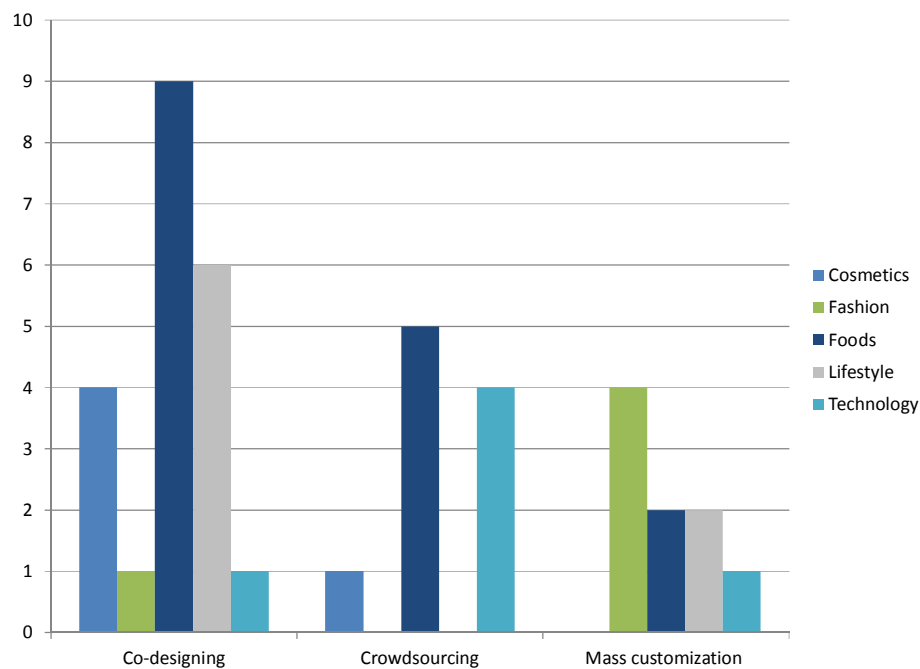
After the two practically relevant key criteria, namely industry and concept have been evaluated, both theoretically relevant key criteria will be analyzed below. Basically the key criteria form and stages in the NPD process are considered as theoretically relevant. The theoretical relevance is based on the analysis in chapter 2 and 3 of this thesis. Chapter 2 provides insights about the NPD process and chapter 3 about the different forms of co-creation activity.

Generally, the theoretical basis and framework (i.e. information about the three selected forms co-designing, crowdsourcing, and mass customization) has been discussed and analyzed in chapter 3.3. The study evaluation of the key criterion form is based on these scientific approaches.

#### **4.5.15 Form and industry**

The analysis of form and industry is analogous to the analysis of industry and form. Only the graphical illustration is different. Hence, the following results were found (see figure 32): The biggest share (i.e. 42.9 %; i.e. nine out of 21 samples) of co-designing was found in the foods industry. 28.5 % (i.e. six out of 21 samples) were found in the lifestyle industry, 19 % (i.e. four out of 21 samples) in the cosmetics industry, and 4.8 % (i.e. one out of 21 samples) were found in both the fashion and the technology industry. 50 % (i.e. five out of ten samples) of crowdsourcing are represented in the foods industry, 40 % (i.e. four out ten samples) in the technology industry and 10 % (i.e. one out of ten samples) in

the cosmetics industry. Mass customization occurs the most (i.e. 44.45 %; i.e. four out of nine samples) in the fashion industry. Each 22.22 % (i.e. two out of nine samples) were found in the foods- and the lifestyle industry and 11.11 % (i.e. one out of nine samples) in the technology industry.



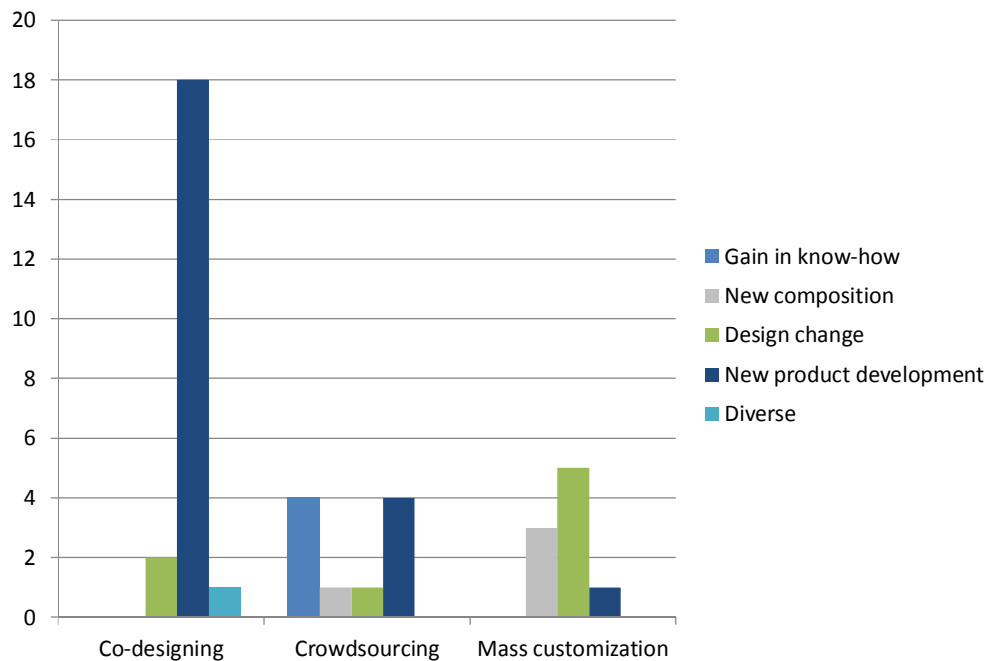
**Figure 32: Analysis of the key criteria form and industry**

Source: own illustration

#### 4.5.16 Form and concept

The analysis of form and concept is analogous to the analysis of concept and form. Only the graphical illustration is different. Hence, the distribution of the various concepts among the three forms of co-creation is as follows (see figure 33): co-designing is clearly dominated by new product development with a share of 85.7 % (i.e. 18 out of 21 samples). 9.5 % (i.e. two out of 21 samples) are represented by design change, and 4.8 % (i.e. one out of 21 samples) presents the one sample where no specific concept could have been assigned. Crowdsourcing is fairly regularly distributed. Each 40% (i.e. four out of ten samples) are attributed to gain in know-how and new product development and 10% (i.e. one out of ten samples) represent new composition and design change. Mass customization applies in 55.56 % (i.e. five out of nine samples) the concept of design

change, in 33.33 % (i.e. three out of nine) of all cases new composition and in 11.11 % (i.e. one out of nine samples) new product development.



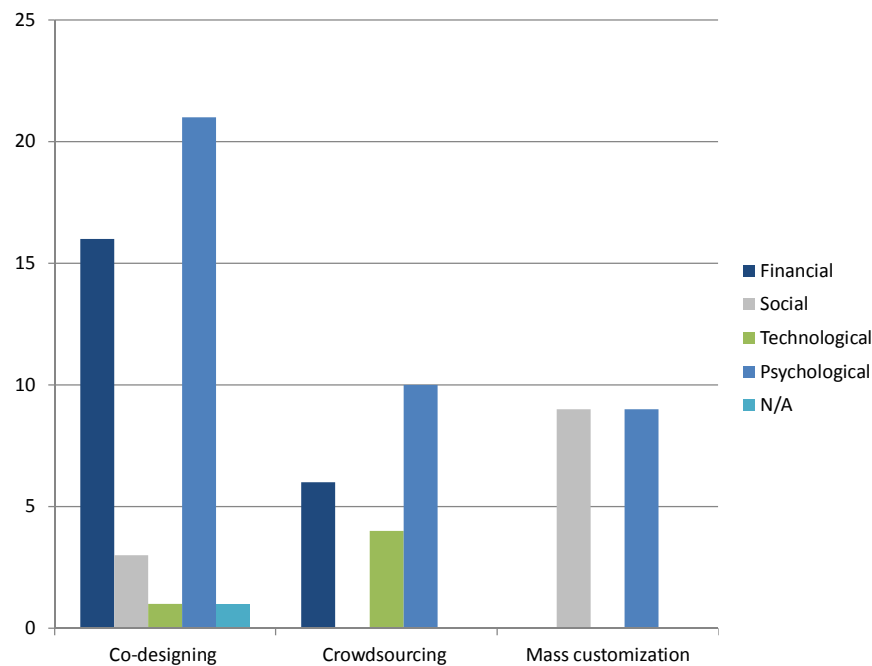
**Figure 33: Analysis of the key criteria form and concept**

Source: own illustration

#### 4.5.17 Form and incentive

As has been previously explained psychological incentives are applied in all study samples, since they decide whether consumers engage in co-creation activities or not. Apart from that co-designing is in most cases with a significant share of 76.2 % (i.e. 16 out of 21 samples) financial incentivized. 14.2 % (i.e. three out of 21 samples) represent social incentives. 4.8 % (i.e. one out of 21 samples) have technological incentives and in one case (i.e. 4.8 %) no information regarding incentives was found. Crowdsourcing is, as co-designing, dominated by financial incentives with a share of 60 % (i.e. six out of ten samples). The remaining 40 % (i.e. four out of ten samples) present technological incentives. With reference to technological incentives it can be derived from the results, that except for one sample, all samples correspond with the technology industry. As regards the dominance of the financial incentives, it can be assumed that companies offer in most cases prizes for the best ideas, concepts etc. Interestingly, 100 % (i.e. nine out of

nine samples) of mass customization have social incentives. This can be logically explained based on the correlation with creators who use the product. Hence, companies do not provide additional incentives.



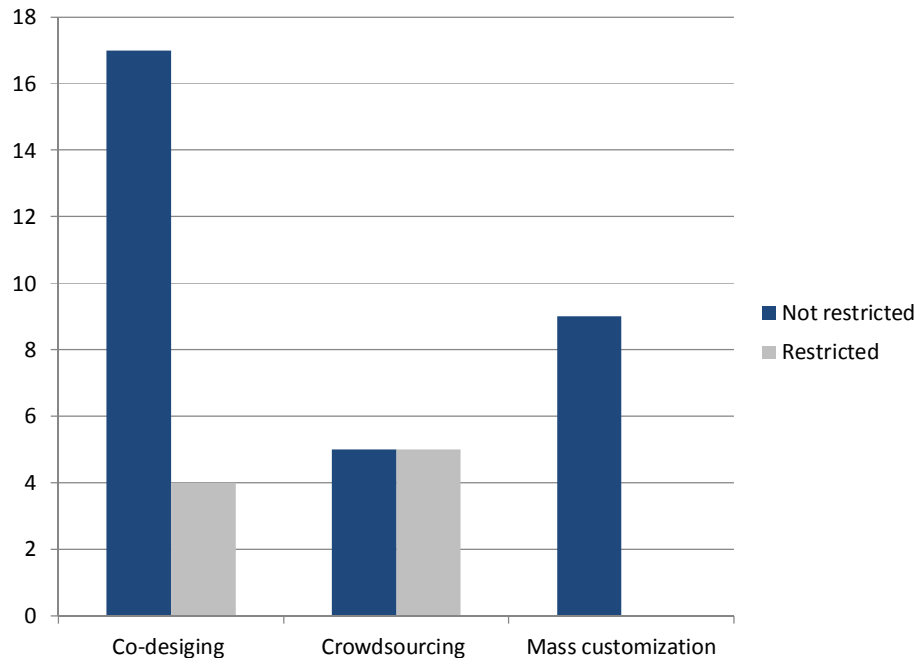
**Figure 34: Analysis of the key criteria form and incentive**

Source: own illustration

#### 4.5.18 Form and target group

Basically figure 35 shows a clear domination of not restricted target groups among all three forms of co-creation activities. Usually not restricted target groups are an indicator for firms' open-mindedness regarding customers' creative novel ideas. While co-designing represents a major share of 81 % (i.e. 17 out of 21 samples) of not restricted target groups, crowdsourcing presents exactly 50 % (i.e. five out of ten samples) of not restricted target groups. The relation between mass customization and target group is not surprising, since this form attracts all customers who are interested in designing their individualized product. Thus, 100 % (i.e. nine out of nine samples) have not restricted target groups. Subsequently, the remaining shares of 19 % (i.e. four out of 21 samples) of co-designing and 50 % (i.e. five out of ten samples) of crowdsourcing have a restricted

target group. Restricted target groups usually indicate that companies require specific customers with particular know-how, expertise and experience.



**Figure 35: Analysis of the key criteria form and target group**

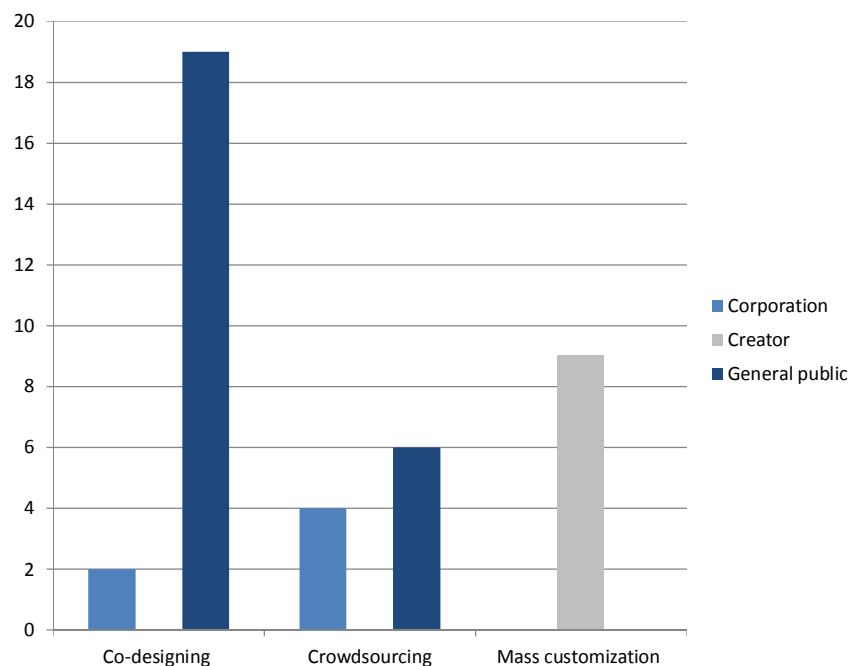
Source: own illustration

#### 4.5.19 Form and use of the product

The evaluation of the relation between form and use of the product is especially interesting. As figure 36 shows there are clear trends recognizable, particularly in co-designing and mass customization. Co-designing is evidently dominated by the use of the product for the general public. Subsequently, 90.5 % (i.e. 19 out of 21 samples) are co-created for the use by the general public and 9.5 % (i.e. two out of 21 samples) are for the corporation. Crowdsourcing is characterized by a major share of 60 % (i.e. six out of ten samples) of the use for the general public too. The remaining 40 % (i.e. four out of ten samples) are again for the corporation. While general public is positively correlated with co-designing and the concept of new product development, corporation shows a relation with crowdsourcing and the concept of gain in know-how. Interestingly, the entire share of the use of the product for the creator is allocated to the form of mass customization.



Hence, 100 % (i.e. nine out of nine samples) show a correlation between mass customization and creator. This can be logically explained, since customers personalize products with the help of configuration systems, which are provided by the corporations for themselves.

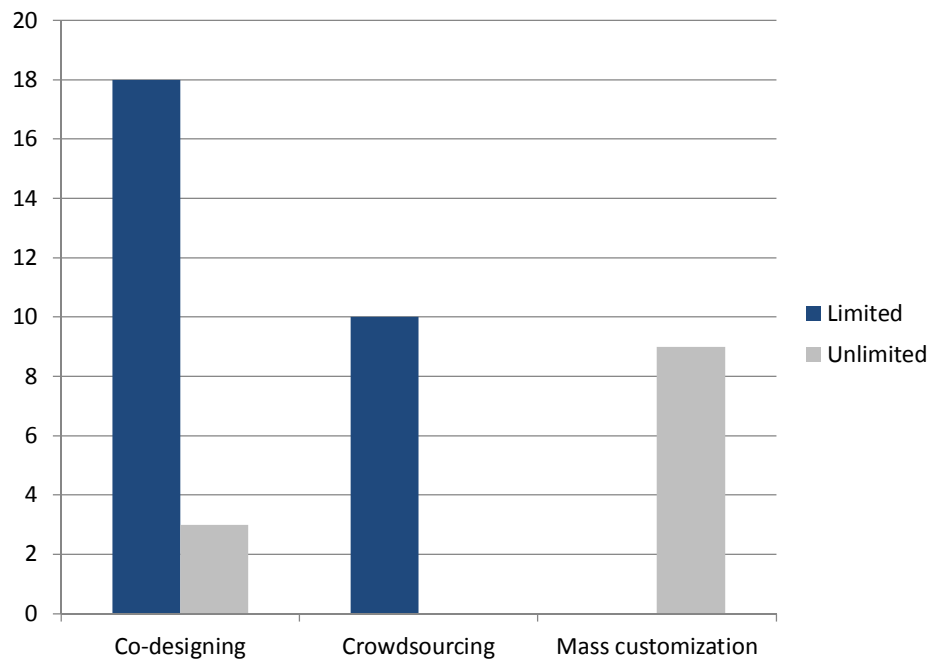


**Figure 36: Analysis of the key criteria form and use of the product**  
Source: own illustration

#### 4.5.20 Form and timeframe

As can be seen in figure 37 only co-designing is characterized by diversified timeframes. Both crowdsourcing and mass customization show only one category of timeframe. As a consequence, co-designing is dominated by limited timeframes with a share of 85.7 % (i.e. 18 out of 21 samples). Accordingly, 14.3 % (i.e. three out of 21 samples) represent unlimited timeframes. Interesting is that crowdsourcing is signified by a 100 % share (i.e. ten out of ten samples) of limited timeframes while mass customization is characterized by 100 % (i.e. nine out of nine samples) of unlimited timeframes. Usually, limited timeframes indicate specific co-creation project, accompanied and guided by the corporations. On the contrary, unlimited timeframes refer to an ongoing possibility to co-

create products. In most cases, as is confirmed by the correlation with mass customization, these cases are about personalizing already existing products.



**Figure 37: Analysis of the key criteria form and timeframe**

Source: own illustration

#### 4.5.21 Form and stages in the NPD process

The evaluation of the relation between form and stages in the NPD process presents interesting results. As figure 38 shows there are clear trends recognizable, particularly in co-designing and mass customization. Co-designing occurs evidently the most in the concept development and testing stage. Yet, other stages are to a minor part presented as well. In contrast, mass customization merely occurs in the product development stage.

##### Co-designing:

57.1 % (i.e. twelve out of 21 samples)	concept development and testing
19 % (i.e. four out of 21 samples)	idea generation; concept development and testing
9.5 % (i.e. two out of 21 samples)	test marketing
4.8 % (i.e. one out of 21 samples)	concept development and testing; product development

4.8 % (i.e. one out of 21 samples)

idea generation; concept development and testing; product development

4.8 % (i.e. one out of 21 samples)

idea generation; concept development and testing; test marketing

#### Crowdsourcing:

40 % (i.e. four out of ten samples)

test marketing

30 % (i.e. three out of ten samples)

concept development and testing

20 % (i.e. two out of ten samples)

idea generation

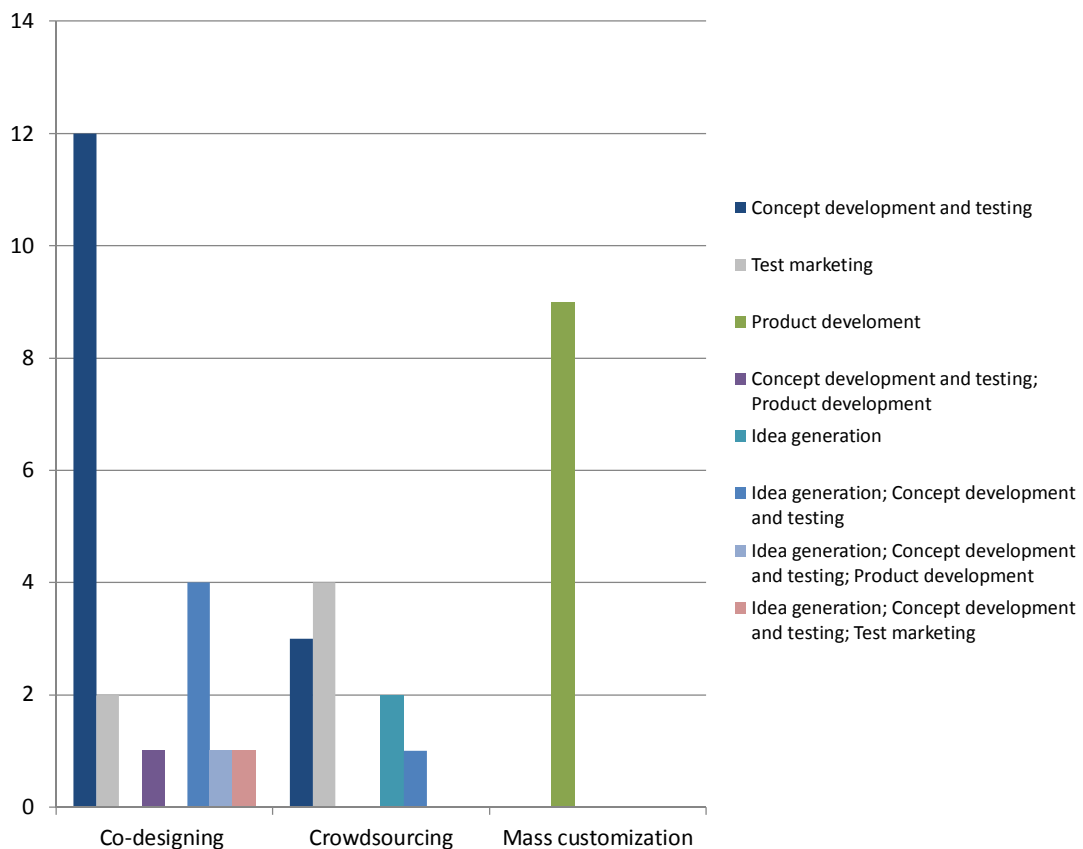
10 % (i.e. one out of ten samples)

idea generation and concept development

#### Mass customization:

100 % (i.e. nine out of nine samples)

product development



**Figure 38: Analysis of the key criteria form and stages in the NPD process**

Source: own illustration

As regards co-designing, it can be noted that across all prevailing stages the concept of new product development is applied. Crowdsourcing shows a relation with new product

development in the technology industry and also the concept of gain in know-how across all stages.

After the first practically relevant key criterion, namely form, has been analyzed above, the key criterion stages in the NPD process will be evaluated in a final step. Generally, the theoretical basis and framework (i.e. information about the four stages idea generation, concept development and testing, product development, and test marketing) has been discussed and analyzed in chapter 2. The study evaluation of the key criterion stages in the NPD process is based on these scientific approaches. It shall be emphasized that apart from the four stages, which have been identified as relevant for consumer co-creation based on Kotler's model (Kotler et al. 2012) "eight stages in the NPD process", there are additionally four combinations of these four stages. These combinations are:

- Idea generation; concept development and testing
- Idea generation; concept development and testing; product development
- Idea generation; concept development and testing; test marketing
- Concept development and testing; product development

#### **4.5.22 Stages in the NPD process and industry**

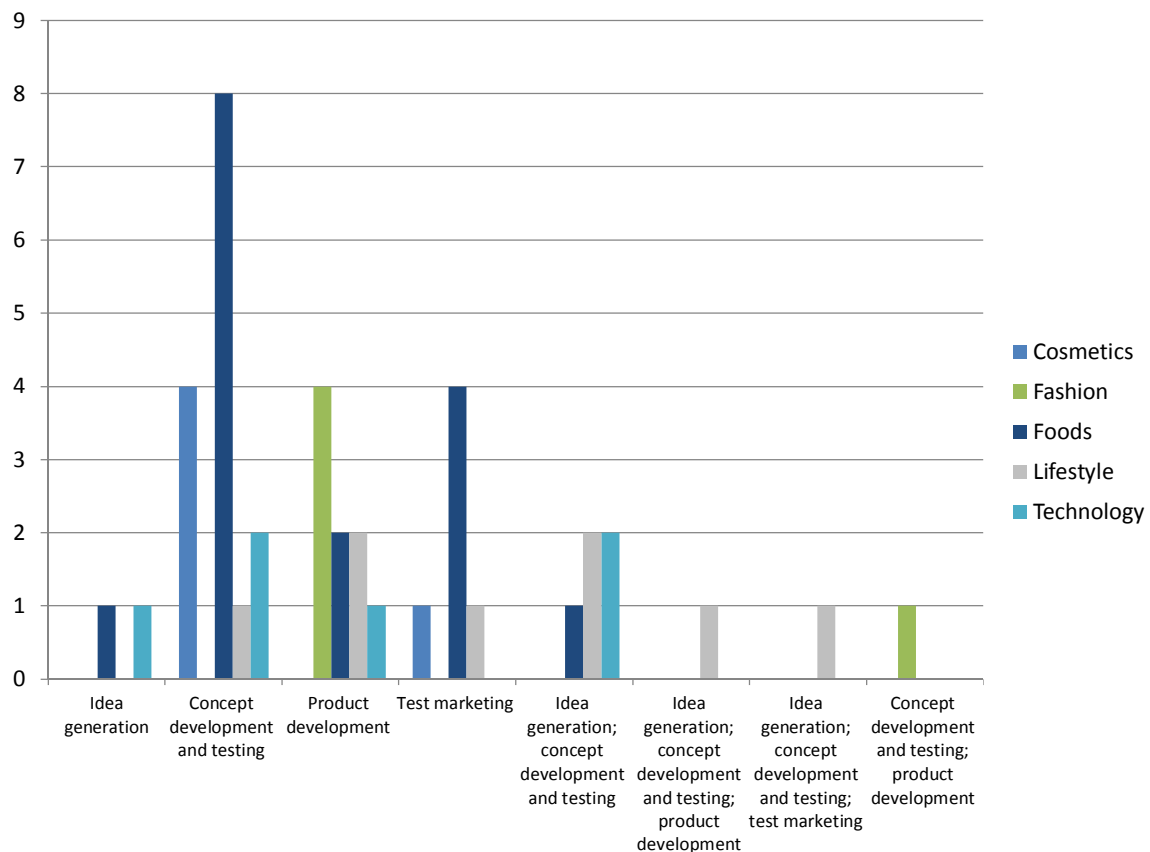
The analysis of stages in the NPD process and industry is analogous to the analysis of industry and stages in the NPD process. Only the graphical illustration is different. Hence, the distribution of the various industries among the different stages in the NPD process is as follows (see figure 39):

##### Idea generation:

50 % (i.e. one out of two samples)	foods industry
50 % (i.e. one out of two samples)	technology industry

##### Concept development and testing:

53.3 % (i.e. eight out of 15 samples)	foods industry
26.7 % (i.e. four out of 15 samples)	cosmetics industry
13.3 % (i.e. two out of 15 samples)	technology industry
6.7 % (i.e. one out of 15 samples)	lifestyle industry



**Figure 39: Analysis of the key criteria stages in the NPD process and industry**

Source: own illustration

#### Product development:

44.5 % (i.e. four out of nine samples)	fashion industry
22.2 % (i.e. two out of nine samples)	foods industry
22.2 % (i.e. two out of nine samples)	lifestyle industry
11.1 % (i.e. one out of nine samples)	technology industry

#### Test marketing:

66.66 % (i.e. four out of six samples)	foods industry
16.67 % (i.e. one out of six samples)	cosmetics industry
16.67 % (i.e. one out of six samples)	lifestyle industry

#### Idea generation; concept development and testing:

40 % (i.e. two out of five samples)	lifestyle industry
40 % (i.e. two out of five samples)	technology industry
20 % (i.e. one out of five samples)	foods industry

Idea generation; concept development and testing; product development:

100 % (i.e. one out of one sample)      lifestyle industry

Idea generation; concept development and testing; test marketing:

100 % (i.e. one out of one sample)      lifestyle industry

Concept development and testing; product development:

100 % (i.e. one out of one sample)      fashion industry

**4.5.23 Stages in the NPD process and concept**

The analysis of stages in the NPD process and concept is analogous to the analysis of concept and stages in the NPD process. Only the graphical illustration is different. Hence, the distribution of the various concepts among the different stages in the NPD process is as follows (see figure 40):

Idea generation:

50 % (i.e. one out of two samples)      new composition

50 % (i.e. one out of two samples)      new product development

Concept development and testing:

80 % (i.e. twelve out of 15 samples)      new product development

20 % (i.e. three out of 15 samples)      design change

Product development:

55.6 % (i.e. five out of nine samples)      design change

33.3 % (i.e. three out of nine samples)      new composition

11.1 % (i.e. one out of nine samples)      new product development

Test marketing:

66.67 % (i.e. four out of six samples)      gain in know-how

33.33 % (i.e. two out of six samples)      new product development

Idea generation; concept development and testing:

100 % (i.e. five out of five samples)      new product development

Idea generation; concept development and testing; product development:

100 % (i.e. one out of one sample)      new product development

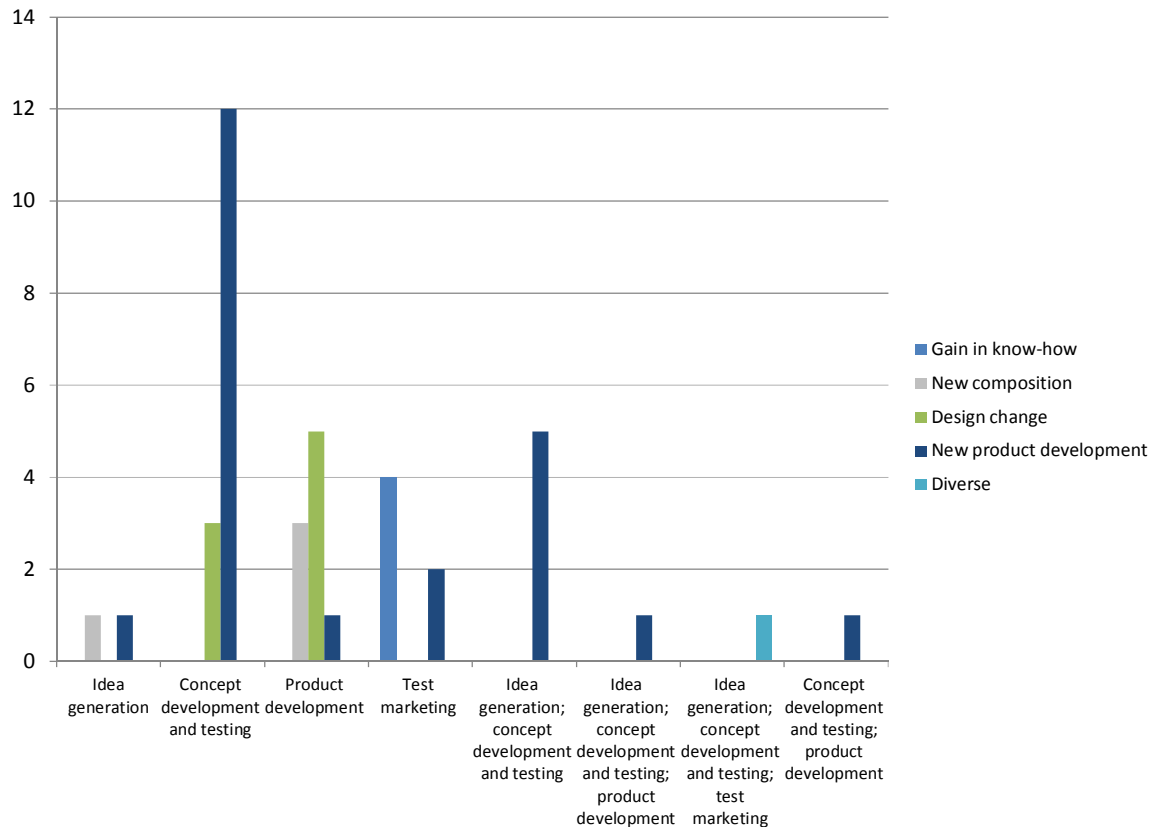
Idea generation; concept development and testing; test marketing:

100 % (i.e. one out of one sample)      diverse

#### Concept development and testing; product development:

100 % (i.e. one out of one sample)

new product development



**Figure 40: Analysis of the key criteria stages in the NPD process and concept**

Source: own illustration

#### **4.5.24 Stages in the NPD process and form**

The analysis of stages in the NPD process and form is analogous to the analysis of form and stages in the NPD process. Only the graphical illustration is different. Hence, the distribution of the various concepts among the different stages in the NPD process is as follows (see figure 41):

#### Idea generation:

100 % (i.e. two out of two samples)

crowdsourcing

#### Concept development and testing:

80 % (i.e. twelve out of 15 samples)

co-designing

20 % (i.e. three out of 15 samples)

crowdsourcing

Product development:

100 % (i.e. nine out of nine samples)      mass customization

Test marketing:

66.67 % (i.e. four out of six samples)      crowdsourcing

33.33 % (i.e. two out of six samples)      co-designing

Idea generation; concept development and testing:

80 % (i.e. four out of five samples)      co-designing

20 % (i.e. one out of five samples)      crowdsourcing

Idea generation; concept development and testing; product development:

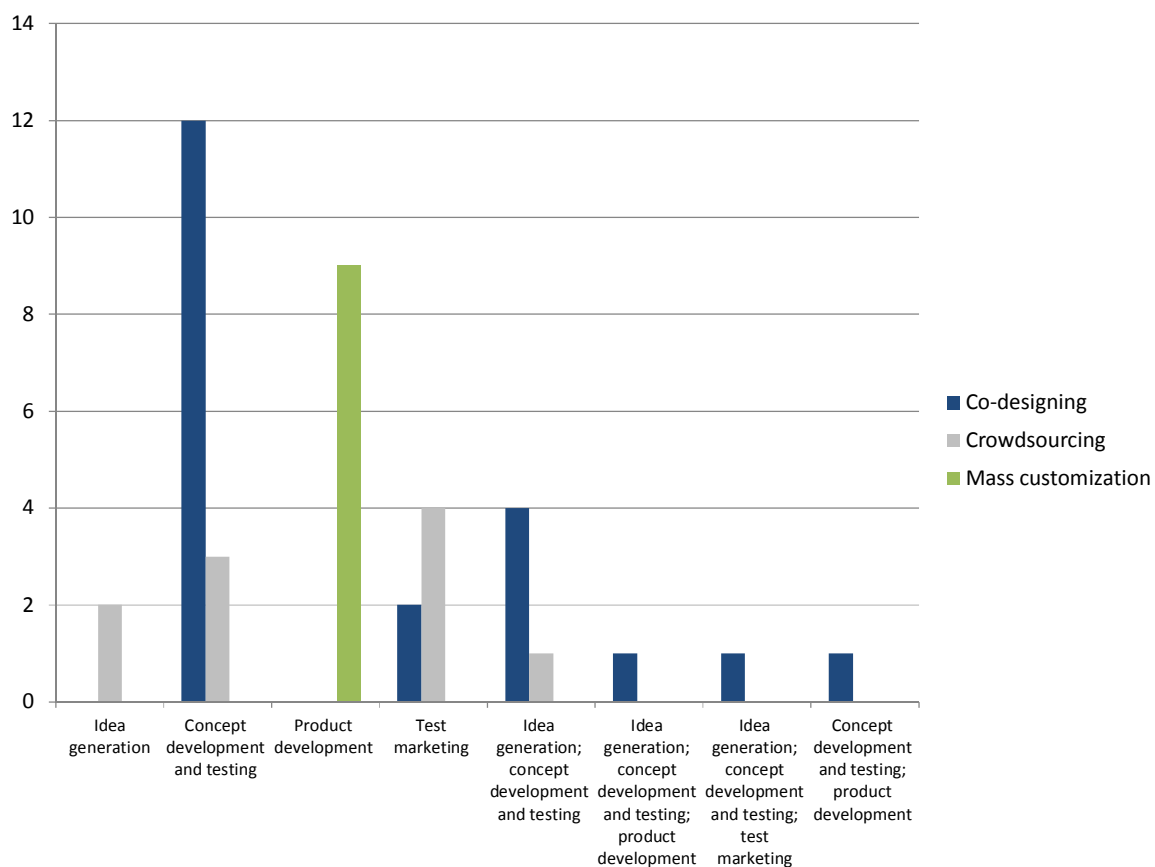
100 % (i.e. one out of one sample)      co-designing

Idea generation; concept development and testing; test marketing:

100 % (i.e. one out of one sample)      co-designing

Concept development and testing; product development:

100 % (i.e. one out of one sample)      co-designing



**Figure 41: Analysis of the key criteria stages in the NPD process and form**

Source: own illustration



#### 4.5.25 Stages in the NPD process and incentive

The analysis of stages in the NPD process and incentive is distributed as follows (see figure 42):

##### Idea generation:

50 % (i.e. one out of two samples)	financial incentive
50 % (i.e. one out of two samples)	technological incentive

##### Concept development and testing:

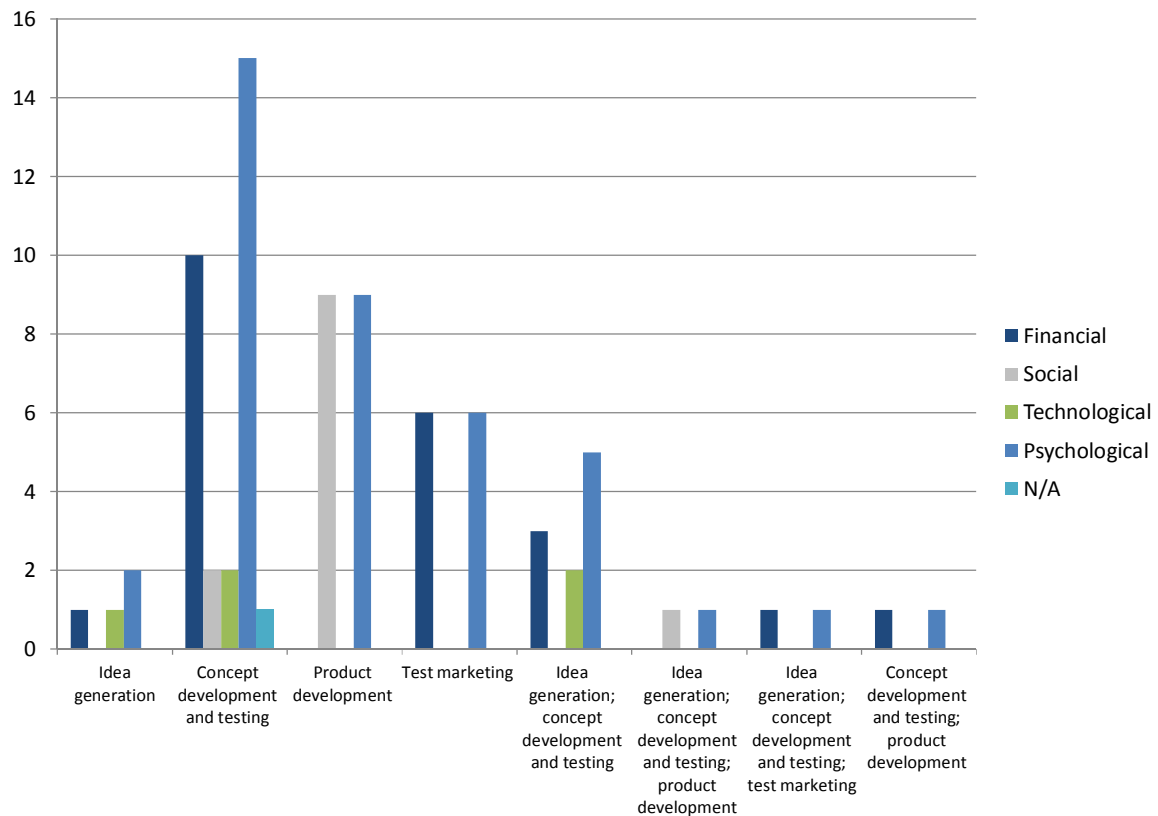
66.67 % (i.e. ten out of 15 samples)	financial incentive
13.33 % (i.e. two out of 15 samples)	social incentive
13.33 % (i.e. two out of 15 samples)	technological incentive
6.67 % (i.e. one out of 15 samples)	N/A

##### Product development:

100 % (i.e. nine out of nine samples)	social incentive
---------------------------------------	------------------

##### Test marketing:

100 % (i.e. six out of six samples)	financial incentive
-------------------------------------	---------------------



**Figure 42: Analysis of the key criteria stages in the NPD process and incentive**

Source: own illustration

Idea generation; concept development and testing:

60 % (i.e. three out of five samples)      financial incentive

40 % (i.e. two out of five samples)      technological incentive

Idea generation; concept development and testing; product development:

100 % (i.e. one out of one sample)      social incentive

Idea generation; concept development and testing; test marketing:

100 % (i.e. one out of one sample)      financial incentive

Concept development and testing; product development:

100 % (i.e. one out of one sample)      financial incentive

Among these results conspicuous aspects exist, especially in the regard of the relation between product development and social incentives. As a matter of fact, all cases of mass customization are positively related with product development and social incentive. Hence, the forms of co-designing and crowdsourcing have exclusively financial incentives among all other stages in the NPD process. Furthermore, except for one sample, all samples that are technologically incentivized are within the technology industry.

#### **4.5.26 Stages in the NPD process and target group**

The analysis of stages in the NPD process and target group is distributed as follows (see figure 43):

Idea generation:

100 % (i.e. two out of two samples)      not restricted

Concept development and testing:

86.67 % (i.e. 13 out of 15 samples)      not restricted

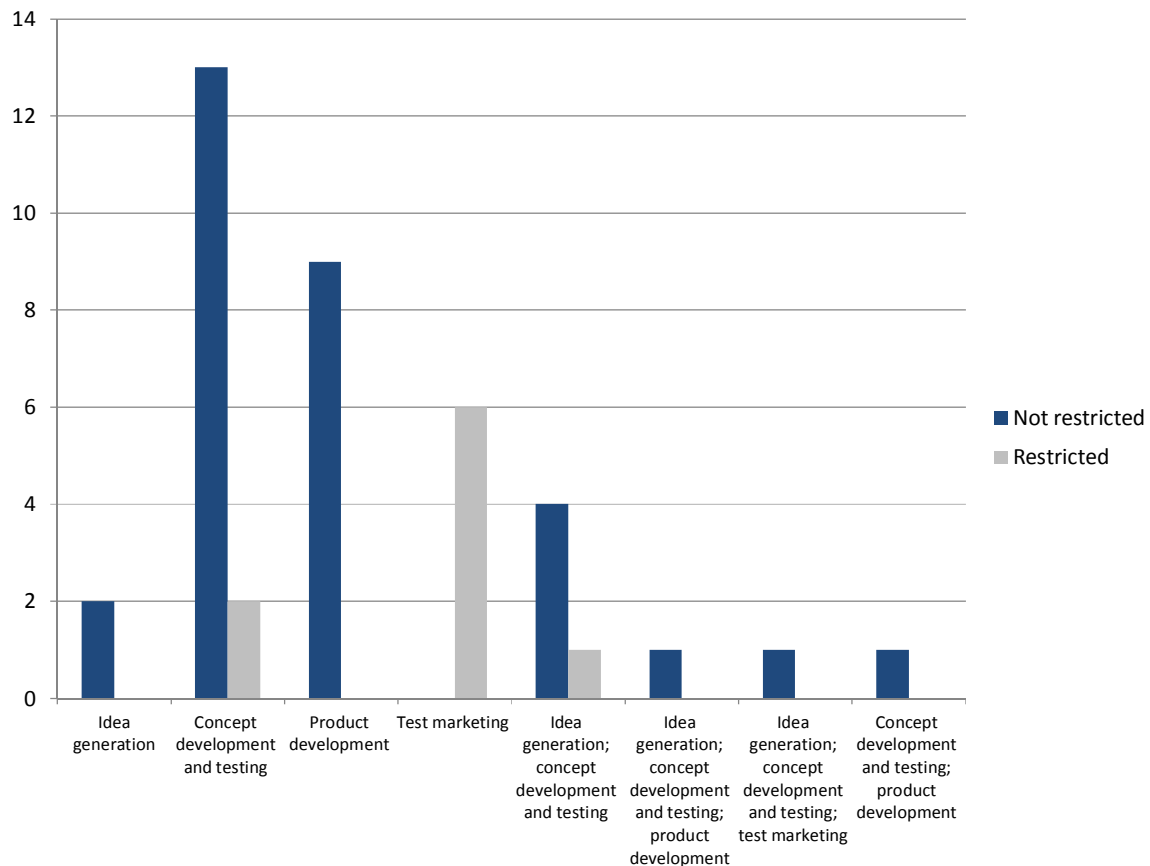
13.33 % (i.e. two out of 15 samples)      restricted

Product development:

100 % (i.e. nine out of nine samples)      not restricted

Test marketing:

100 % (i.e. six out of six samples)      restricted



**Figure 43: Analysis of the key criteria stages in the NPD process and target group**

Source: own illustration

Idea generation; concept development and testing:

80 % (i.e. four out of five samples) not restricted

20 % (i.e. one out of five samples) restricted

Idea generation; concept development and testing; product development:

100 % (i.e. one out of one sample) not restricted

Idea generation; concept development and testing; test marketing:

100 % (i.e. one out of one sample) not restricted

Concept development and testing; product development:

100 % (i.e. one out of one sample) not restricted

Based on these results it can be seen that the biggest share of all samples has not restricted target groups across the NPD process. Usually, not restricted target groups indicate that companies are open for all kinds of ideas, experiences and know-how. In contrast, restricted target groups refer to the requirement of specific users, who have

particular qualifications and know-how. The group of participants for co-creation activities is selected based on certain criteria required by the company. In most cases, those participants are specific users of a product that has already been launched. Based on these facts the dominant occurrence of restricted target groups in the test marketing stage can be explained. Interestingly, all six samples of test marketing also correspond with the use of the product for corporations, a limited timeframe and financial incentives.

#### **4.5.27 Stages in the NPD process and use of the product**

The analysis of stages in the NPD process and use of the product is distributed as follows (see figure 44):

##### Idea generation:

100 % (i.e. two out of two samples)      general public

##### Concept development and testing:

100 % (i.e. 15 out of 15 samples)      general public

##### Product development:

100 % (i.e. nine out of nine samples)      creator

##### Test marketing:

100 % (i.e. six out of six samples)      corporation

##### Idea generation; concept development and testing:

100 % (i.e. five out of five samples)      general public

##### Idea generation; concept development and testing; product development:

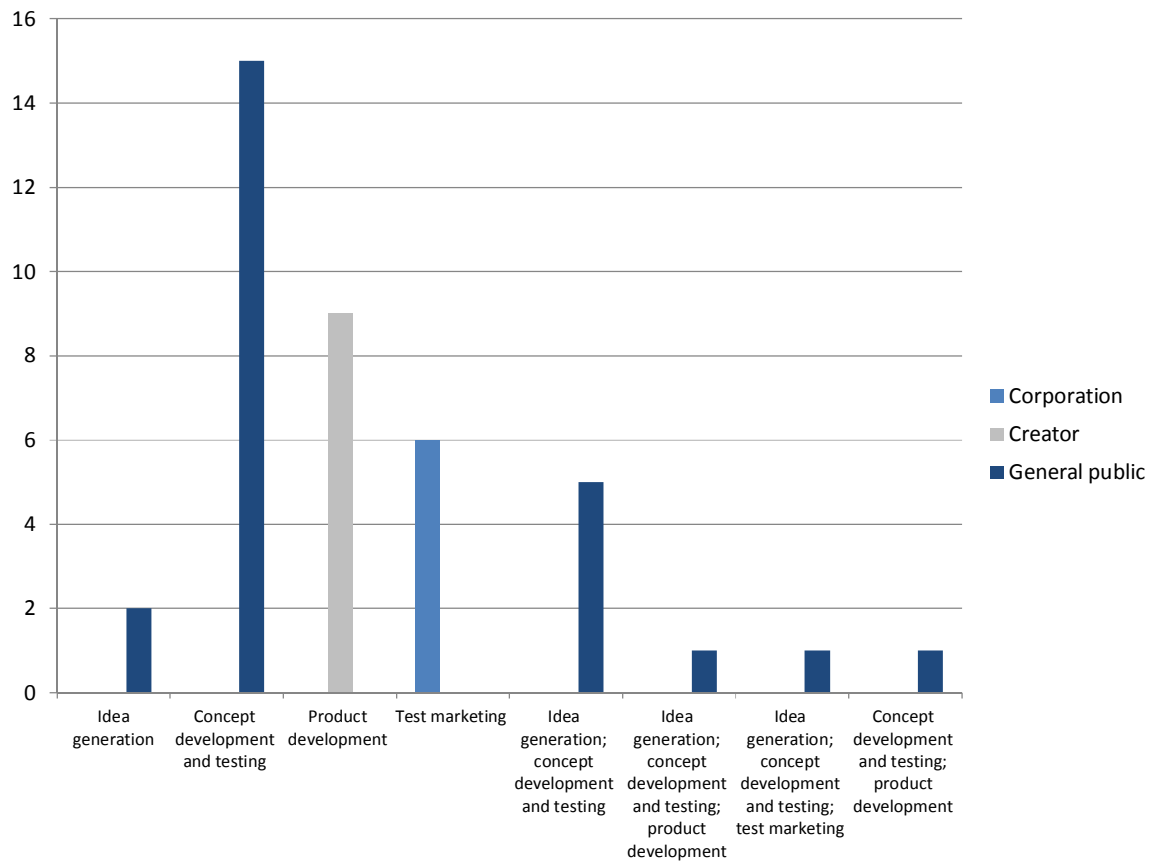
100 % (i.e. one out of one sample)      general public

##### Idea generation; concept development and testing; test marketing:

100 % (i.e. one out of one sample)      general public

##### Concept development and testing; product development:

100 % (i.e. one out of one sample)      general public



**Figure 44: Analysis of the key criteria stages in the NPD process and target group**

Source: own illustration

Most remarkably, each stage in the NPD process as well as all combinations of the stages is characterized by only one category of use of the product. Generally, the use of the product for the general public outweighs the use for the corporation and the creator. It is interesting that all co-creation activities within the product development stage are created for the creators themselves. In this context there is evidence for the correlation with the form of mass customization. Furthermore, the use of the product for the corporation is entirely found within the test marketing stage. Finally, the use for the general public is spread over the remaining stages in the NPD process. Though, it is most striking in the concept development and testing stage.

#### 4.5.28 Stages in the NPD process and timeframe

The analysis of stages in the NPD process and timeframe is distributed as follows (see figure 45):

##### Idea generation:

100 % (i.e. two out of two samples)      limited

##### Concept development and testing:

100 % (i.e. 15 out of 15 samples)      limited

##### Product development:

100 % (i.e. nine out of nine samples)      unlimited

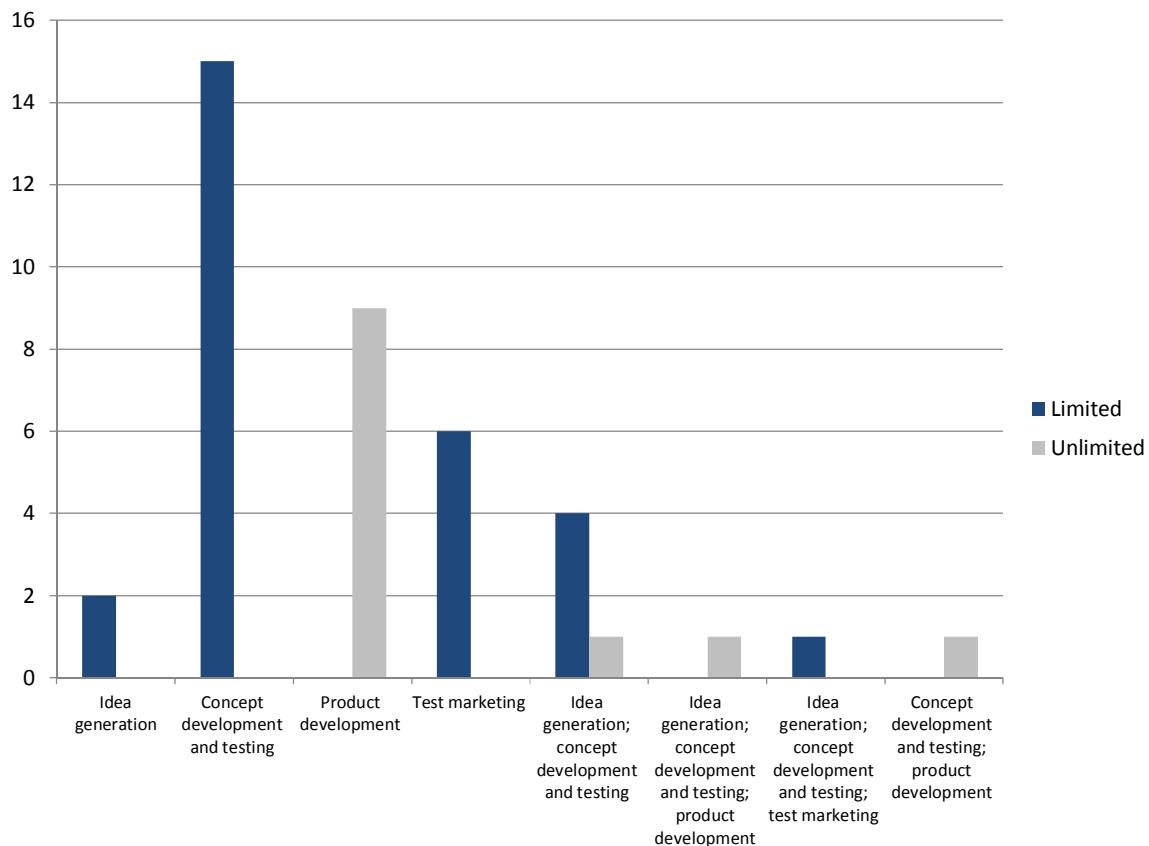
##### Test marketing:

100 % (i.e. six out of six samples)      limited

##### Idea generation; concept development and testing:

80 % (i.e. four out of five samples)      limited

20 % (i.e. one out of five samples)      unlimited



**Figure 45: Analysis of the key criteria stages in the NPD process and timeframe**

Source: own illustration

Idea generation; concept development and testing; product development:

100 % (i.e. one out of one sample)      unlimited

Idea generation; concept development and testing; test marketing:

100 % (i.e. one out of one sample)      limited

Concept development and testing; product development:

100 % (i.e. one out of one sample)      unlimited

Overall, most of the study samples have a limited timeframe. Furthermore, it can be recognized that only one combination of stages (i.e. idea generation; concept development and testing) shows both limited and unlimited timeframes. As has been previously explained, a limited timeframe indicates specific co-creation projects, while unlimited timeframes in most cases refer to the form of mass customization and thus, to an ongoing opportunity to co-design products.

## **4.6 Recommendations for action for companies**

As a summary of the evaluations of the individual key criteria this chapter is devoted to the following two essential questions:

- a) What is the company's objective of consumer co-creation activities?
- b) In which industry is the company operating?

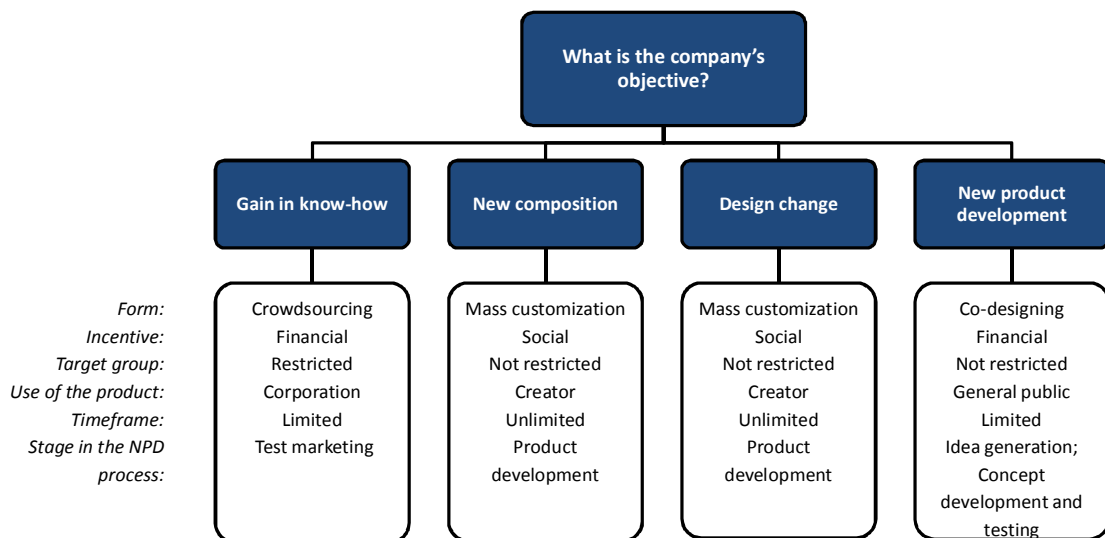
From the analysis of these two questions recommendations for action for companies can be derived.

### **4.6.1 What is the company's objective of consumer co-creation activities?**

To begin with the first question, a comparison of the concepts is made. It demonstrates for each concept which form of consumer co-creation, which kind of incentive, which target group, what kind of use of the product, which timeframe is most applicable in which stage in the NPD process. (see figure 46) The company's predefined objective of consumer co-creation is represented by the chosen concept. These four concepts are: gain in know-how, new composition, design change and new product development. Depending on the selection of a specific concept there have been certain conditions (i.e. key criteria) identified that occur most often among the sample size.

As concerns gain in know-how, crowdsourcing is the single form that is used. Through crowdsourcing companies can collect and use customer specific information, know-how and proposals of novel ideas for the purpose of their internal product development. It is interesting that all samples of gain in know-how represent 100 % in each of the relevant conditions, without any exceptions. Accordingly, companies that aim to achieve gain in know-how are well advised to financially incentivize the co-creation activities. Furthermore, a restricted target group as well as a limited timeframe is recommended. As has already been mentioned above, the use of the product for the corporation results from the fact that corporations use the customers' contributions for their internal development. Finally, companies seem to achieve the best inputs during the test marketing stage.





**Figure 46: What is the company's objective? A comparison of the concepts**

Source: own illustration

With reference to new composition and design change it is interesting that all conditions are the same. Thus, the predominant form of both concepts is mass customization. Through mass customization companies allow their customers to co-design already existing products. In return, companies gain insights in to novel trends, customers' preferences, and needs. This allows them to align their new product development accordingly. In general, companies are well advised to provide attractive social incentives. This could be an attractive easy-to-use configuration system, or a strong social community. Moreover, target groups shall be not restricted and the timeframe unlimited. However, these two conditions are reasonably derived from the fact that on the one hand, mass customization is an ongoing co-creation process and not a specific project and on the other hand, companies benefit the most from co-design in case of not restricted target groups over an unlimited period of time. It is also clear that the use of the product is most beneficial for the creator, since mass customization is the individualization of particular products. Finally, since mass customization has been defined as a part of the final product development, the stage in the NPD process is product development.

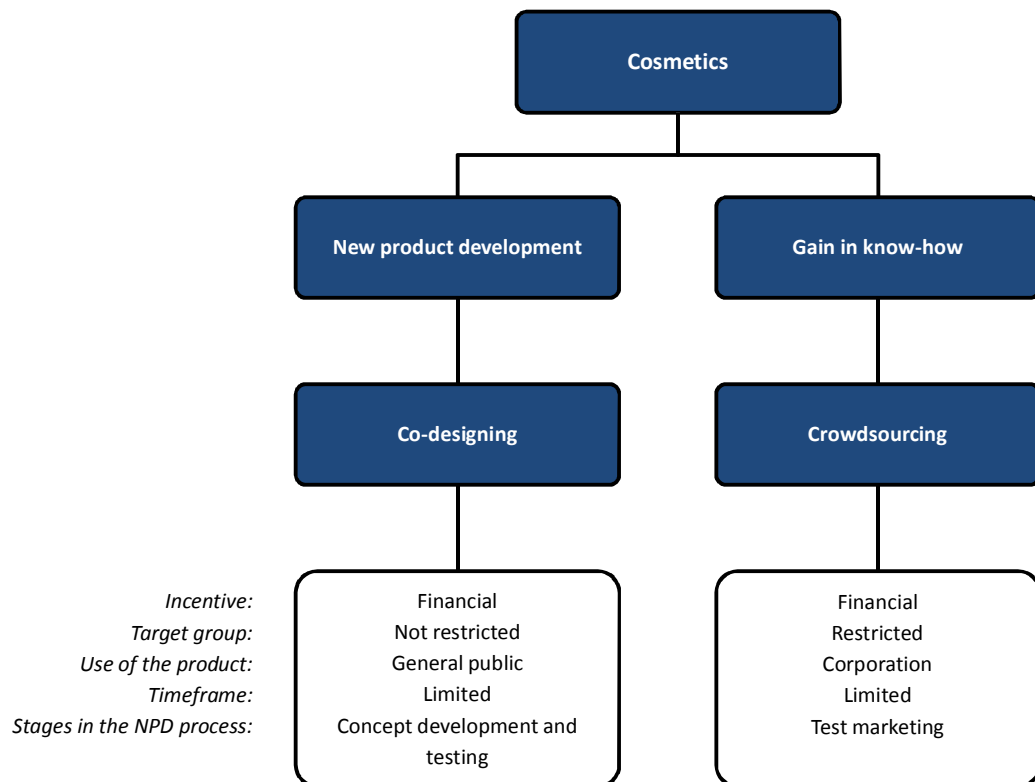
The predominating form of new product development is co-designing. Since new product development represents the highest level of all concepts and co-designing has both the highest degree of consumer involvement and customer contribution to the NPD process, this correlation is consistent. For companies that want to achieve customer co-created new product development financial incentives are recommended. In order to gain the maximum contributions of consumer ideas and know-how, the target group shall be not restricted. Due to the fact, that the concept of new product development takes place within a specific project, companies should limit the project's timeframe. Since the purpose of new product development is to commonly develop new products, the use of the product is for the general public. As has already been mentioned above, the relation between new product development and co-designing represents the highest level of consumer co-creation activities. Therefore, it is reasonable that all respective actions take place foremost in the concept development and testing stage, but also in the idea generation stage.

#### **4.6.2 In which industry is the company operating?**

The second question aims to demonstrate how to achieve a company's objective in terms of the selection of the right form and several framework conditions on the level of industries. Thus, companies can use these recommendations specifically according to the industry they operate in.

Companies in the cosmetics industry strive for the achievement of either gain in know-how or new product development through consumer co-creation. In the case of gain in know-how, companies are well advised to use the form of crowdsourcing. As has already been discussed in answering question one about the company's objective, the framework conditions of the relation between gain in know-how and crowdsourcing are financial incentives, restricted target groups, limited timeframes, the use of the product for the corporation most efficiently during the test marketing stage. In the event of new product development it is recommended for companies to use the form of co-designing. The framework conditions are, as has been analyzed above in answering the first question in case of new product development financial incentives, not restricted target groups,

limited timeframes, and the use of the product for the general public during the concept development and testing stage. (see figure 47)



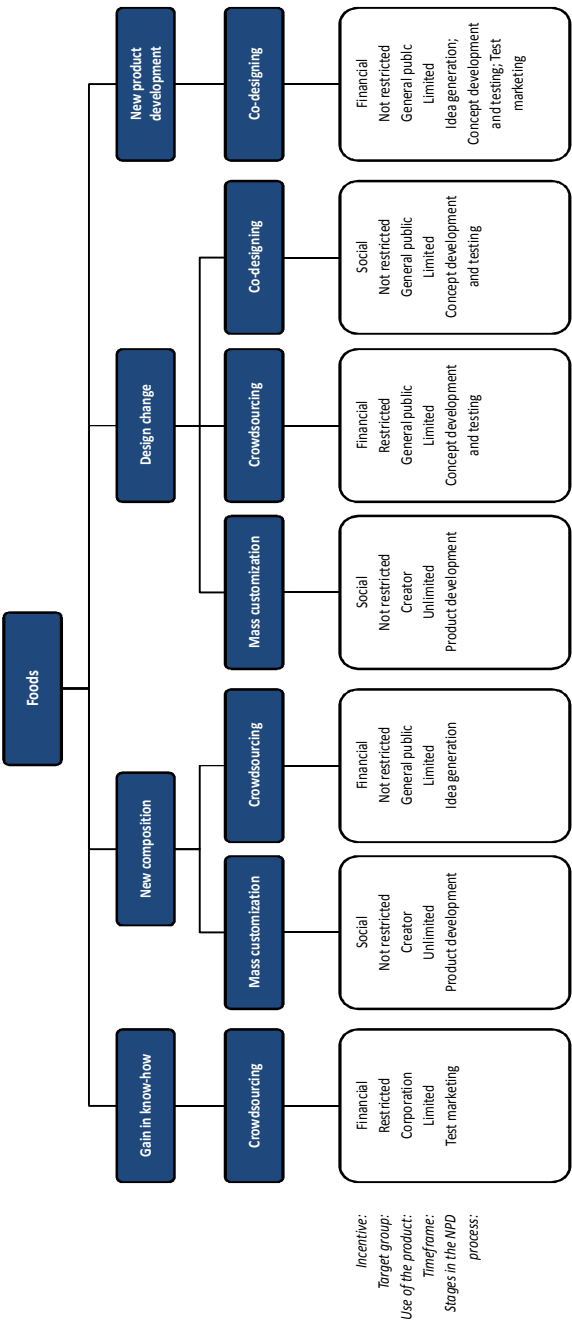
**Figure 47: Recommendations for companies operating in the cosmetics industry**

Source: own illustration

Companies in the foods industry have the biggest variety of co-creation activities. As figure 48 shows, all four concepts are represented among the objectives of the company. To begin with gain in know-how, it is recommended to companies to use the form of crowdsourcing. The respective main characteristics correspond to the usual ones already presented in the answer of question one about the company's objective. Thus, companies should provide financial incentives, have restricted target groups, limited timeframes, and the use of the product is for the corporation itself. In order to receive valuable results, companies should implement the co-creation activities during the test marketing stage. In contrast to the lifestyle industry and the technology industry, where the applied form in case of new composition is mass customization, the foods industry uses additionally the form of crowdsourcing. The main characteristics do not match the ones that have already

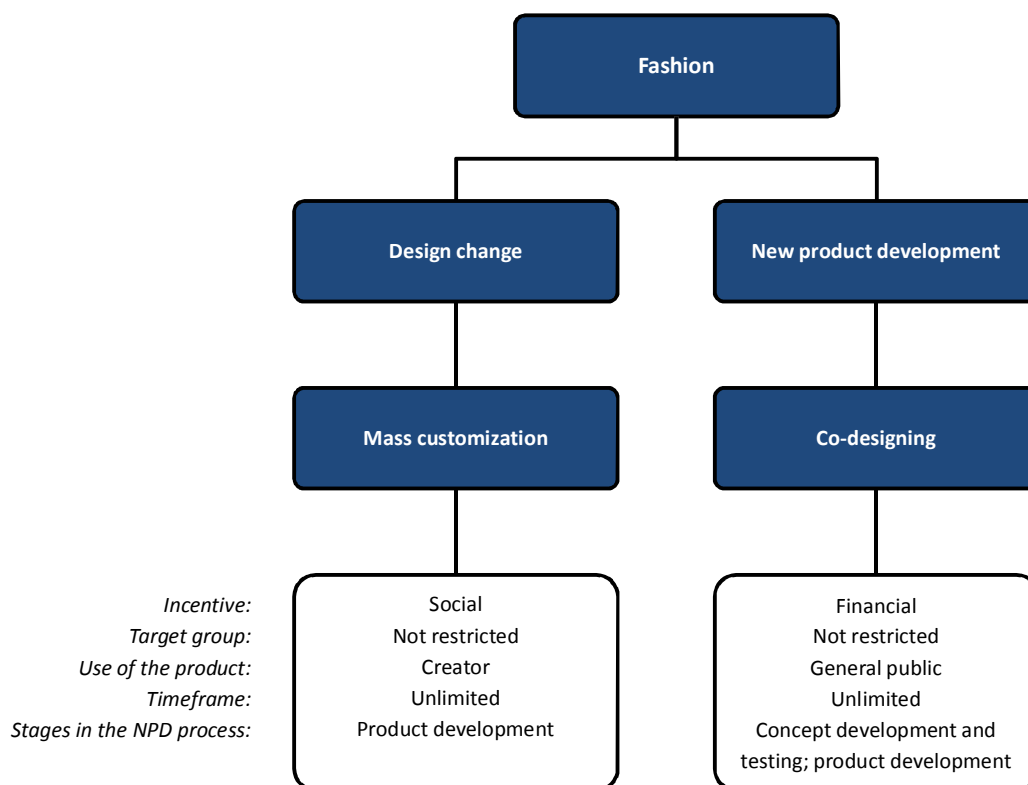
been presented in the answer of question one except for financial incentives and limited timeframes. Instead, for valuable results for gain in know-how derived from crowdsourcing companies in the foods industry, those companies are well advised to have not restricted target groups and follow a use of the product for the general public. Also the relevant stage in the NPD process is different, namely the idea generation stage. Though, the main characteristics of the second form of new composition in the foods industry, namely mass customization, correspond to the usual ones. Hence, companies should offer social incentives, have not restricted target groups, unlimited timeframes, the use of the product is for the creators themselves, and the co-creation activities are part of the product development stage. The form of design change in the foods industry is the only one where all three forms are applicable. Overall, the dominating form according to the answer of question one about the company's objective is mass customization. However, also crowdsourcing and co-designing are considered to be relevant especially in the foods industry. To start with mass customization, the main characteristics found in the analysis about the recommendations for companies based on the objectives correspond as in all other industries in the foods industry. Thus, companies should offer strong social incentives, have not restricted target groups, unlimited timeframes, and consider the use of the product for the creators themselves. Furthermore, the customers' contribution should be implemented in the product development stage. The characteristics of crowdsourcing in the event of design change show slight deviations from the overall representative characteristics found in the recommendation for companies based on the objective. While companies should also offer incentives in the form of financial rewards, have restricted target groups and limited timeframes, the use of the product is considered to be for the general public. Moreover, the stage in which the consumers contribute their know-how, novel ideas and personal experiences is different, namely the concept development stage. Finally, co-designing in the case of design change represents the main characteristics based on the recommendations concerning the company's objective except for the incentives, which should be social in design change. Apart from this difference, companies should have not restricted target groups, limited timeframes, the use of the product is considered to be for the general public and the respective stage in the NPD process is the concept development and testing stage. Finally, the last objective is new product development. In this case,

companies are well advised to use the form of co-designing. With a single exception in the stages in the NPD process, all other main characteristics match the ones identified in the recommendations for companies based on their objective. As a result, companies should offer financial incentives, have not restricted target groups, limited timeframes and the use of the product is for the general public. The only exception refers to an extension of the stages in the NPD process. Not only is the concept development and testing stage and the idea generation stage relevant but also the test marketing stage.



**Figure 48: Recommendations for companies operating in the foods industry**  
 Source: own illustration

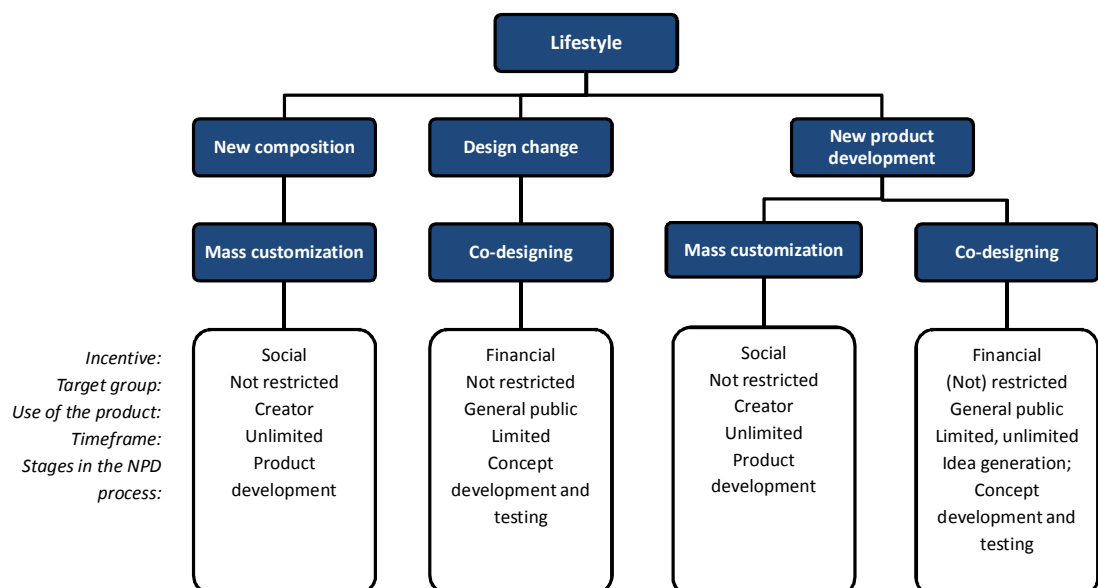
Companies operating in the fashion industry have the objective of design change on the one hand and new product development on the other hand. Not surprisingly do the characteristics of both objectives agree with what has been described above in the answer of question one. Thus, companies who strive for design change should use the form of mass customization. The main characteristics of the consumer co-creation activities are social incentives, not restricted target groups, unlimited timeframes, and the use of the product for the creator as part of the product development stage. Companies, which want to develop new products with consumers, are well advised to use the form of co-designing. In order to achieve the best results they should offer financial incentives, have not restricted target groups, and the use of the product for the general public. While all these characteristics correspond with the ones described in the answer of the first question, the timeframes are unlimited instead of limited, and to the stage of concept development and testing the product development stage is added. (see figure 49)



**Figure 49: Recommendations for companies operating in the fashion industry**

Source: own illustration

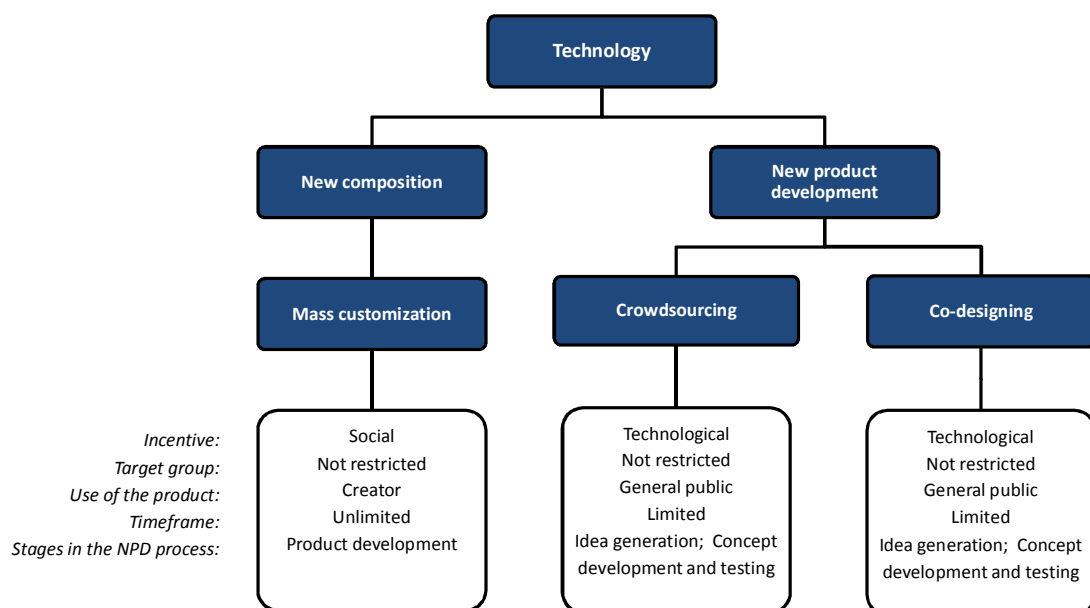
Companies operating in the lifestyle industry have three different objectives of consumer co-creation. First of all, new composition; secondly, design change; and thirdly, new product development. Firstly, companies that want to achieve new composition of products with consumer co-creation activities are recommended to use the form of mass customization. Again, the main characteristics of the objective of new composition, as has been discussed in the first question of recommendations apply. Thus, companies should offer strong social incentives, have not restricted target groups, unlimited timeframes, and offer the use of the product for the creators themselves. Furthermore, the customers' contribution should be implemented in the product development stage. Secondly, companies that strive for successful products' design change should use the form of co-designing. In contrast to the answers delivered in the first question with reference to design change, the main characteristics are different except for a not restricted target group. Hence, companies should provide financial incentives and limit the projects' timeframe. The use of the product is considered to be for the general public and the stage, in which the co-creation activities should take place, is concept development and testing. (see figure 50)



**Figure 50: Recommendations for companies operating in the lifestyle industry**  
Source: own illustration

Thirdly, the concept of new product development represents two different forms that can be applied, namely mass customization and co-designing. While co-designing is considered to be the usual matching form in the relation with new product development, as has been also shown in the answer of question one of the recommendations, mass customization is a surprising complementation. Mass customization presents the typical main characteristics: social incentives, not restricted target groups, unlimited timeframes, the use of the product for the creator and the stage of product development. Co-designing, though, shows deviations from the typical main characteristics. While the incentives in form of financial rewards as well as the use of the product for the general public meet the representative characteristics, companies can either have restricted or not restricted target groups. Also, companies can choose whether to limit or not the timeframes. The stages, in which the co-creation activities shall take place, are the idea generation stage and the concept development and testing stage.

Companies in the technology industry have two different objectives of consumer co-creation: On the one hand, new composition, and on the other hand, new product development.



**Figure 51 Recommendations for companies operating in the technology industry**

Source: own illustration



As in the lifestyle industry, in the case of new composition, the form of mass customization should be used. The main characteristics are accordingly: social incentives, not restricted target groups, unlimited timeframes, the use of the product for the creator, and the consumer co-creation activities take place in the product development stage. In the event of new product development though, two different forms can be applied: crowdsourcing and co-designing. As mass customization in the lifestyle industry is not the usual matching form in the relation with new product development, so is crowdsourcing the surprising complementation to co-designing in the technology industry. Except for limited timeframes, crowdsourcing does not represent the typical characteristics. Instead, companies in the technology industry should provide technological incentives, have not restricted target groups and the use of the product is for the general public. Also, the stages in the NPD process are different, namely the idea generation stage and the concept development and testing stage. Co-designing, though, shows the usual representative main characteristics of the relation between new product development and co-designing except for the incentives, which are not financial but technological. As a consequence, companies should have not restricted target groups, limited timeframes, the use of the product for the general public, and as in the case of crowdsourcing, the co-creation activities shall take place in the idea generation stage and the concept development and testing stage. (see figure 51)

## **5 Conclusion**

The last chapter of this master thesis provides a conclusion. Chapter 5.1 will present the theoretical implications by summarizing the scientific approaches that have been dealt with through out this master thesis. Furthermore, ideas for further research will be suggested. Practical implications of the underlying thesis will be presented in chapter 5.2. These practical implications shall deliver answers to questions that help support corporations with the use of the gained knowledge from the previous chapters.

### **5.1 Theoretical implications**

Due to the current importance of the topic, consumer co-creation in the NPD process raises new questions and discussions in the scientific research. This master thesis gives an impetus and attempts to fill the gap presented in chapter 1.1 with a holistic overview of this topic.

First, chapter 2 presents an overview of the NPD process and analyzes three different models developed by different researchers. As can be seen in the comparison of these three models (see figure 4) the NPD process consists of different stages depending on the respective definition. With respect to the importance of the NPD process in the context of consumer co-creation it has been tried to identify and define these stages that are especially relevant and promising for companies to involve consumers. However, the identification has not been taken from some model but is based on the interpretation of prior research and the study samples examined from practice. Yet, depending on the use of certain definitions and approaches different results can be derived. Hence, it is suggested that future research endeavors to develop a more consistent definition.

Next, chapter 3 deals with the broadly used term consumer co-creation. Even though a lot of literature exists about this topic there is no all-encompassing definition of co-creation. Rather, various distinctive concepts can be found as synonymously used. Thus, diverse definitions have been discussed in order to provide an answer to the questions about what is consumer co-creation, where consumer co-creation comes from and how it is applied by companies. Especially, the definition of forms that can be considered to be

consumer co-creation as well as a clear distinction from related terms calls for further research. Following a statement by Piller et al. (2010) it is absolutely necessary to understand, which of the different forms shall be used in order to make companies benefit from consumer co-creation activities and also to meet the corporations' targets. (Piller et al. 2010, p. 21) As has been discussed in chapter 3.3, three forms of consumer co-creation (mass customization, crowdsourcing, co-designing) have been outlined in more detail. It shall be pointed out that these three forms have been derived from the literature review combined with the analysis of the underlying study.

The holistic overview of consumer co-creation in the NPD process in this master thesis has shown that this topical issue entails challenges not only for corporations but also for the scientific research. In the scientific literature a systematic examination of the whole topic is hardly existent and still raises further discussions and research questions after a careful consideration.

## ***5.2 Practical implications***

Unquestionably, the topic of this master thesis is highly relevant for corporations in practice. Due to factors like globalization, fast technological innovations and a highly dynamic business environment our world is experiencing dramatic changes. These changes eventually have a significant impact on companies' NPD strategies. Companies have to face a greater demand and must deal with faster changing consumer needs. Subsequently companies must have a strong product development strategy in order to stay competitive. As a consequence of these challenges companies increasingly start to have consumers contribute in the NPD process in order to being able to develop products that best meet the consumers' needs and expectations. Through this rather novel approach that has evolved from the concept of open innovation, users can actively engage in the co-creation process and have a voice in the selection of the final product. (HYVE, as of March 15th 2015; Schmatzer 2014, p. 16)

For the implementation of the study a model has been developed that allows analyzing corporations that use consumer co-creation in their NPD process. All relevant factors the model comprises of have been explained in detail in order to ensure and clearly indicate

which scientific approach has been taken as basis. Based on the insights gained from the literature review combined with the results from the study evaluation recommendations for action for companies in form of guidance were provided. On the one hand, recommendations were given according to the industry the company is operating in, and on the other hand, companies can follow the suggested framework conditions based on the selected concept.

The underlying master thesis allows companies to obtain a global view of consumer co-creation and the NPD process, its different models, approaches, definitions and concepts. This holistic overview matters for an efficient and sustainable development of a company's product development strategy. Both the findings from the literature analysis as well as the main key criteria and its associated framework conditions are of great interest for companies that are in the process of deciding on involving consumers in the product development by providing a first overview and possible measurements. Yet, also for companies that already involve consumers into the NPD process the findings deliver possible adjustments for improvement and of the product development strategy.

The conducted study has been explored the European market especially due to the fact that most studies deal with the most prominent examples that are mostly from the United States. For this master thesis no quantitative studies of consumer co-creation on the European market have been found. Thus, this fact gives an opportunity that future research could address. Moreover, the underlying study provides a superficial research approach based on data available online. In order to allow more complex insights a more in-depth study could be done. Through a qualitative research method, more reliable and detailed information (i.e. key performance indicators) about the companies could be obtained.

Conclusively, it appears that the field of consumer co-creation in the NPD process becomes ever more relevant. This is mainly due to the extraordinarily efficient way of developing novel products, which best meet consumers' expectations and needs.

## ***References***

### ***Books***

- Chesbrough, Henry / Vanhaverbeke, Wim / West, Joel (2006): Open Innovation: Researching a New Paradigm, Oxford: University Press.
- Chesbrough, Henry (2011): Open Services Innovation- Rethinking Your Business to Grow and Compete in a New Era. 1<sup>st</sup> ed., San Francisco, California: Jossey-Bass.
- Hart, Christian (1998): Doing a Literature Review. Releasing the Social Science Research Imagination. London (u.a.): Sage.
- Kotler, Philip / Armstrong, Gary (2012): Principles of Marketing. 14<sup>th</sup> ed., New Jersey: Prentice Hall.
- Prahalad, C.K. / Ramaswamy, Venkat (2004a): The Future of Competition: Co-Creating Unique Value with Customers. Boston: Harvard Business School Press.
- Von Hippel, Eric (2005): Democratizing Innovation. Cambridge, Massachusetts: MIT Press.

### ***Papers***

- Albinsson, Lars / Lind, Mikael / Forsgren, Olov (2007): Co-Design: An Approach to Border Crossing, Network Innovation. in Expanding the Knowledge Economy: Issues, Applications, Case Studies, Paul Cunningham and Miriam Cunningham (Eds), IOS Press, Amsterdam, pp. 977 – 983.
- Berger, Christoph / Piller, Frank (2003): Customers as co-designers. IEE Manufacturing Engineering, pp. 42 – 45.
- Berger, Christoph / Möslin, Kathrin / Piller, Frank / Reichwald, Ralf (2005): Co-designing modes of cooperation at the customer interface: learning from exploratory research. European Management Review, pp. 1 – 18.
- Bolton, Ruth N. / Saxena-Iyer, Shruti (2009): Interactive Services: A Framework, Synthesis and Research Directions. Journal of Interactive Marketing, 23, pp. 91 – 104)

- Brabham, Daren C. (2008): Crowdsourcing as a Model for Problem Solving. An Introduction and Cases. *Convergence: The International Journal of Research into New Media Technologies*, Vol. 14 (1), pp. 75 – 90.
- Bradfield, D. J. / Gao, J. X. (2007): A methodology to facilitate knowledge sharing in the new product development process. *International Journal of Production Research*, Vol. 45, No. 7, pp. 1489 – 1504.
- Clark, Ronald A. / Goldsmith, Ronald E. (2005): Market mavens: Psychological influences. *Psychology & Marketing*, Vol. 22 (4), pp. 289 – 312.
- Cooper, Robert G. (2008): Perspective: The Stage-Gate Idea-to-Launch Process – Update, What’s New and NexGen Systems. *Journal of Product Innovation Management*, Vol. 25, pp. 213 – 232.
- Dong, Beibei / Evans, Kenneth R. / Zou, Shaoming (2008): The effects of customer participation in co-created service recovery. *Journal of the Academy of Marketing Science* (36), pp. 123 – 137.
- Estellés-Arolas, Enrique / González-Ladrón-de-Guevara, Fernando (2012): Towards an integrated crowdsourcing definition. *Journal of Information Science*, Vol. 38 (2), pp. 189 – 200.
- Etgar, Michael (2008): A descriptive model of the consumer co-production process. *Journal of the Academy of Marketing Science*, Vol. 36, pp. 97 – 108.
- Filieri, Raffaele (2013): Consumer co-creation and new product development: a case study in the food industry. *Marketing Intelligence & Planning*, Vol. 31. No. 1, pp. 40 – 53.
- Hoffmann, Donna L. / Kopalle, Praveen K. / Novak, Thomas P. (2010): The “Right” Consumers for Better Concepts: Identifying and Using Consumers High in Emergent Nature to Further Develop New Product Concepts. *Journal of Marketing Research*, Vol. XLVII, pp. 854 – 865.
- Hoyer, Wayne D. / Chandy, Rajesh / Dorotic, Matilda / Krafft, Manfred / Sing, Siddarth S. (2010): Consumer Cocreation in New Product Development. *Journal of Service Research*, 13 (3), pp. 283 – 296.
- Kleemann, Frank / Voß, Günter G. / Rieder, Kerstin (2008): Un(der)paid Innovators: The Commercial Utilization of Consumer Work through Crowdsourcing. *Science, Technology & Innovation Studies*, Vol. 4, No. 1, pp. 5 – 26.

- Laursen, Keld / Salter, Ammon (2006): Open for innovation: The role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, Vol. 27, pp. 131 – 150.
- Lusch, Robert F. / Brown, Stephen W. / Brunswick, Gary J. (1992): A General Framework for Explaining Internal vs. External Exchange. *Journal of the Academy of Marketing Science*, Vol. 20, No. 2, pp. 119 – 134.
- Lusch, Robert F. / Vargo, Stephen L. (2006): Service-Dominant Logic: Reactions, Reflections and Refinements. *Marketing Theory*, 6 (3), pp. 281 – 288.
- Mladenow, Andreas / Bauer, Christine / Strauss, Christine (2014): Social Crowd Integration in New Product Development: Crowdsourcing Communities Nourish the Open Innovation Paradigm. *Global Journal of Flexible Systems Management*, 15 (1), pp. 77-86.
- Nambisan, Satish (2002): Designing Virtual Customer Environment for New Product Development: Toward a Theory. *The Academy of Management Review*, Vol. 27, No. 3, pp. 392 – 413.
- Nambisan, Satish / Baron, Robert A. (2009): Virtual Customer Environments: Testing a Model of Voluntary Participation in Value Co-creation Activities. *Journal of Product Innovation Management*, 26 (4), pp. 388-406.
- Ogawa, Susumu / Piller, Frank T. (2006): Reducing the Risks of New Product Development. *MIT Sloan Management Review*, Vol. 47, No. 2., pp. 65 – 71.
- O'Hern, Matthew S. / Rindfleisch, Aric (2009): Customer Co-Creation: A Typology and Research Agenda. in *Review of Marketing Research*, Vol. 6, Naresh K. Malholtra, ed. Armonk, NY: M.E. Sharpe, pp. 84-106.
- Pénin, Julien / Burger-Helmchen, Thierry (2011): Crowdsourcing of inventive activities: definitions and limits. *International Journal of Innovation and Sustainable Development*, Vol. 5, pp. 246 – 263.
- Piller, Frank / Berger, Christoph / Möslin, Kathrin / Reichwald, Ralf (2003): Co-Designing the Customer Interface: Learning from Exploratory Research. Working paper, Arbeitsbericht Nr. 37 des Lehrstuhls für Betriebswirtschaftslehre – Information, Organisation und Management der Technischen Universität München, pp. 1 – 34.
- Piller, Frank / Ihl, Christoph / Vossen, Alexander (2010): A Typology of Customer Co-Creation in the Innovation Process. *SSRN Electronic Journal*, 12 / 2010, pp. 1 – 26.

- Piller, Frank / Vossen, Alexander / Ihl, Christoph (2012): From Social Media to Social Product Development: The Impact of Social Media on Co-Creation of Innovation. In: Bruhn, Manfred (Hrsg.): Die Unternehmung. Swiss Journal of Business Research and Practice. Baden-Baden: Nomos. pp. 7 – 27.
- Prahalad, C.K. / Ramaswamy, Venkat (2000): Co-opting Customer Competence. Harvard Business Review, 78 (1), pp. 78 – 87.
- Prahalad, C.K. / Ramaswamy, Venkat (2004b): Co-creation experiences: The next practice in value creation. Journal of Interactive Marketing, Vol. 18, No. 3.
- Sanders, Elizabeth B.-N. / Stappers, Pieter Jan (2008): Co-creation and the new landscape of design. CoDesign: International Journal of CoCreation in Design and the Arts, Vol. 4, No. 1, pp. 5 – 18.
- Schmatzer, Lena (2014): “Kundenmotive bei co-creation in der Neuproduktentwicklung”, Seminararbeit im Rahmen der Lehrveranstaltung “Neuere Entwicklungen in eBusiness & eLogistics”, Universität Wien.
- Steen, Marc / Manschot, Menno / De Koning, Nicole (2011): Benefits of Co-design in Service Design Projects. International Journal of Design, Vol. 5, No. 2, pp. 53 – 60.
- Stevens, Greg A. / Burley, James (2003): Piloting the rocket of radical innovation. Research Technology Management, Vol. 46 (2), pp. 16 – 25.
- Van Doorn, Jenny / Lemon, Katherine N. / Mittal, Vikas / Nass, Stephan / Pick, Doreén / Pirner, Peter / Verhoef, Peter C. (2010): Customer Engagement Behavior: Theoretical Foundations and Research Directions. Journal of Service Research 13, pp. 253 – 266.
- Vargo, Stephen L. / Lusch, Robert F. (2004): Evolving to a New Dominant Logic for Marketing. Journal of Marketing, Vol. 68, No. 1, pp. 1 – 17.
- Vargo, Stephen L. / Lusch, Robert F. (2008): Service- dominant logic: continuing the evolution. Journal of the Academy of Marketing Science, Vol. 36, pp. 1 – 10.
- Von Hippel, Eric (1986): Lead Users: A Source of Novel Product Concepts. Management Science, Vol. 32, No. 7, pp. 791 – 805.
- Von Hippel, Eric / von Krogh, Georg (2006): Free Revealing and the Private Collective Model for Innovation Incentives. R&D Management, 36 (3), pp. 295 – 306.
- Walsh, Gianfranco / Elsner, Ralf (2012): Improving referral management by quantifying market mavens’ word of mouth value. European Management Journal, 30, pp. 74 – 81.



- Webster, Jane / Watson, Richard T. (2002): Analyzing the Past to Prepare for the Future: Writing a Literature Review. MIS Quarterly, Vol. 26, No. 2, pp. 13 – 23.
- Wind, Jerry / Rangaswamy, Arvind (2001): Customerization: The next revolution in mass customization. Journal of interactive marketing, Vol. 15, No. 1, pp. 13 – 32.

### ***Internet sources***

- Adidas: <http://www.adidas.de/personalisieren>, as of April 2nd, 2015
- ANNA Inspiring Jewellery: <http://www.annaij.com/designyourbracelet/>, as of April 2nd, 2015
- Audi: <http://www.michaelbartl.com/article/audi/>, as of April 2nd, 2015
- BMW: <https://www.bmwgroup-cocreationlab.com/>, as of April 2nd, 2015
- Burberry: <http://us.burberry.com/bespoke/create-trench-coat/#/?de=MW>, as of April 2nd, 2015
- Chocri: <http://www.chocri.de/>, as of April 2nd, 2015
- Coca Cola: <http://coca-cola.jovoto.com/>, as of April 2nd, 2015
- Co-Creation in New Product Development: <http://vimeo.com/28986632>, as of February 23rd, 2015
- Copa Wein & Delibar: <https://unseraller.de/CopaWeinbar/BusinessLunch>, as of April 2nd, 2015
- Danone:  
[http://www.welldone.at/uploads/media/\\_Pressemitteilung\\_FruchtZwerge\\_20110512\\_final.pdf](http://www.welldone.at/uploads/media/_Pressemitteilung_FruchtZwerge_20110512_final.pdf), as of April 2nd, 2015
- Darbo: <http://company.kjero.com/kjero-cases/darbo-teesirup-best-practice>, as of April 2nd, 2015
- DaWanda: <http://de.dawanda.com/>, as of April 2nd, 2015
- Die gute Schokolade: <http://die-gute-schokolade.trnd.com/>, as of April 2nd, 2015
- dm Drogeriemarkt: [https://unseraller.de/dm\\_drogerie\\_markt/balea\\_dusche](https://unseraller.de/dm_drogerie_markt/balea_dusche), as of April 2nd, 2015
- Dream Heel: <http://www.dream-heels.ch/pages/traumschuh-gestalten>, as of April 2nd, 2015
- Ducati: [http://www.ducati.com/special\\_configurator/index.do](http://www.ducati.com/special_configurator/index.do), as of April 2nd, 2015
- Egi-Öl: <https://unseraller.de/EgiOel/dressing3>, as of April 2nd, 2015

- Electrolux: <http://electroluxdesignlab.com/2015/>, as of April 2nd, 2015
- Fiat: <http://www.ideaconnection.com/open-innovation-success/Fiat-Mio-the-World%E2%80%99s-First-Crowdsourced-Car-00273.html>, as of April 2nd, 2015
- Füller, Johann (2014): Was kann die Intelligenz der Masse für KMUs leisten?, <http://blog.openalps.org/wp-content/uploads/2014/06/Hyve.pdf>, as of 22.04.2015
- Haribo: <https://goldbaeren-fan-edition.de/>, as of April 2nd, 2015
- Heineken: <http://www.ideasbrewery.com/>, as of April 2nd, 2015
- Henkel: [http://www.henkel.at/2011-18113\\_mitmachen-auf-www-packdesign-contest-com-18349\\_ATD\\_HTML.htm](http://www.henkel.at/2011-18113_mitmachen-auf-www-packdesign-contest-com-18349_ATD_HTML.htm), as of April 2nd, 2015
- Hem: <http://hem.com/>, as of April 2nd, 2015
- Hibiscarin: <https://unseraller.de/Hibiscarin>, as of April 2nd, 2015
- Howe, Jeff (2006b): Crowdsourcing: Why the power of the crowd is driving the future of business, Crowdsourcing: A Definition: [http://www.crowdsourcing.typepad.com/cs/2006/06/crowdsourcing\\_a.html](http://www.crowdsourcing.typepad.com/cs/2006/06/crowdsourcing_a.html), as of March 19th, 2015
- Howe, Jeff (2006a): Crowdsourcing: Why the power of the crowd is driving the future of business, Customer-Made: the Site: [http://crowdsourcing.typepad.com/cs/2006/06/customer-made\\_th.html](http://crowdsourcing.typepad.com/cs/2006/06/customer-made_th.html), as of March 19th, 2015
- HYVE: <https://www.hyve.net>, as of March 15th, 2015
- Internet-based research: [http://cphs.berkeley.edu/internet\\_research.pdf](http://cphs.berkeley.edu/internet_research.pdf), as of April 2nd, 2015
- IKEA: [http://www.ikea.com/ms/de\\_DE/campaigns/services/planer\\_und\\_ratgeber.html](http://www.ikea.com/ms/de_DE/campaigns/services/planer_und_ratgeber.html), as of April 2nd, 2015
- Jovoto: <http://www.jovoto.com/>, as of April 2nd, 2015
- Kelly's: <http://company.kjero.com/co-creation>, as of April 2nd, 2015
- Kotler Marketing: [http://www.kotlermarketing.com/phil\\_questions.shtml](http://www.kotlermarketing.com/phil_questions.shtml), as of February 21st, 2015
- Kühne: <http://kuehne-salatlust.trnd.com/>, as of April 2nd, 2015
- Lego: <https://ideas.lego.com>, <http://www.lego.com/de-de/creator>, as of April 2nd, 2015

- Manhattan: <https://unseraller.de/Manhattan>, as of April 2nd, 2015
- Mymuesli: <http://www.mymuesli.com/>, as of April 2nd, 2015
- NIVEA: <http://nivea-cellular-perfect-skin.trnd.com/informationen/>, as of April 2nd, 2015
- Oscar: <http://www.theoscarproject.org/>, as of April 2nd, 2015
- Panta rhei: <https://unseraller.de/FrischFrisch/PantarheiNutritions>, as of April 2nd, 2015
- Peugeot: <http://www.tuvie.com/peugeot-flux-car-concept/>, as of April 2nd, 2015
- Ricola: <https://ricola2015.jovoto.com/briefing>, as of April 2nd, 2015
- Rittersport: <http://www.ritter-sport.de/blog/2010/12/13/ritter-sport-blog-schokolade-mit-euch-von-euch-fur-euch-2/>, as of April 2nd, 2015
- Spreadshirt: <http://www.spreadshirt.de/>, as of April 2nd, 2015
- Tchibo: <https://www.tchibo-ideas.de/>, as of April 2nd, 2015
- Tyrolit: <https://www.hyve.net/en/the-tyrolit-knife-sharpener/>, as of April 2nd, 2015
- unserAller: <https://unseraller.de/>, as of April 2nd, 2015
- Unser Aller Badaboom: <https://unseraller.de/unserAller/badaboom>, as of April 2nd, 2015
- Unser Aller Milchsack: <https://unseraller.de/unserAller/milchsack>, as of April 2nd, 2015

## Appendix

### Appendix I – Summary of different co-creation concepts and definitions

Authors	Year	Definition / Concept
Chesbrough	2006	Founded on the definitions of the open innovation concept, it can be concluded that consumer co-creation basically arose with the development of open innovation. “Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively.” (Chesbrough 2006, p. 2)
Hoyer et al.	2010	Hoyer et al. (2010) define co-creation as the result of a considerably augmented consumer power. In this regard, they point out the concept of consumer “empowerment” that is a formative aspect in the concept of consumer co-creation and NPD. “Empowerment” connotes the changing role of consumers in terms of their desire to actively contribute new ideas to the new product development and thus create value in exchange with firms. (Hoyer et al. 2010, p. 283)
Lusch et al.	2006	Lusch et al. (2006) distinguish between co-creation and co-production. On the one hand, co-creation means that the customer creates and determines value during the consumption process and usage of a certain product (also defined as value-in-use). On the other hand, co-production “(...) involves the participation in the creation of the core offering itself. It can occur through shared inventiveness, co-design, or shared production of related goods, and can occur with customers and any other partners in the value network.” (Lusch et al. 2006, p. 284)
O’Hern et al.	2009	Co-creation activities vary regarding the degree the customers are autonomously involved in the NPD process. There are four types of co-creation build upon the theoretical approach that customers can be empowered and involved either in the contribution of new ideas, in the selection of new ideas or in both. Notably, contribution activities can be either fixed or open, and selection activities can be customer-led or firm-led (see figure 5). (O’Hern et al. 2009, p. 89)
Piller et al.	2010	Customer co-creation denotes “an active, creative and social process, based on collaboration between producers (retailers) and customers (users)” (Piller et al. 2010, p. 9). Customer co-creation is derived and based on a firm-driven strategy. co-creation (including all relevant concepts and types discussed in this paper) requires the provision of necessary tools and systems by the firm. In other words, firms are responsible for the overall organization of the NPD process as well as for the development of a concept including an infrastructure that allows customer to actively contribute in the NPD process. (Piller et al. p. 8ff)

Prahalad et al.	2000	Customers have become “a new source of competence” (Prahalad et al. 2000, p. 80) with the emergence of co-creation. Customers cannot only contribute their individual knowledge and skills, but they are also willing to actively engage in a dialogue with the firms to enhance the NPD process. (Prahalad et al. 2000, p. 80)
Prahalad et al.	2004a	<p>Co-creation has started with the role of consumers that has changed in today’s globalized world. Three decisive characteristics are leading this change:</p> <ol style="list-style-type: none"> <li>1. Consumers are no longer segregated but are connected to numerous networks.</li> <li>2. They are no longer uninformed but well informed.</li> <li>3. They are no longer uninvolved but become actively involved in the business system. (Prahalad et al. 2004a, p. 2)</li> </ol> <p>Consequently, this allows consumers who want to interact in the new product development process to take a more proactive role. (Prahalad et al. 2004a, p. 4f)</p>
Prahalad et al.	2004b	<ul style="list-style-type: none"> <li>• Co-creation is a collective process in the new product development between companies and customers.</li> <li>• Co-creation allows the customers to individually co-create products according to their experiences and perspectives.</li> <li>• Co-creation is about jointly defining and solving issues.</li> <li>• Co-creation provides an experience platform that invites customers to actively communicate and develop personalized products and applications.</li> <li>• Co-creation presupposes a well established communication channel and constant dialogue.</li> <li>• Co-creation is about implementing and realizing individually tailored experiences.</li> <li>• Co-creation is about the innovation of experimental environment in order to co-create new experiences.</li> </ul>
Van Doorn et al.	2010	They conceive that “customer engagement behaviors go beyond transactions, and may be specifically defined as a customer’s behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers.” (van Doorn et al. 2010, p.254)

**Table 4: Summary of different co-creation concepts and definitions**

Source: own illustration

## Appendix II – Summary of the conducted study

No.	Country	Industry	Concept	Form	Incentive	Target group	Use of the product	Timeframe	Stages in the NPD process	Company	Name of the study / product
1	DACH	Lifestyle	Diverse	Co-designing	Financial	Not restricted	General public	Limited	Idea generation, Concept development and testing, Test marketing	Tchibo	Tchibo Ideas
2	DACH	Foods	Design change	Co-designing	Social	Not restricted	General public	Limited	Concept development and testing	Panta rhei	Banolenendesign
3	DACH	Foods	New product development	Co-designing	Social	Not restricted	General public	Limited	Concept development and testing	Egi-Öl	Salatdressing
4	DACH	Foods	New composition	Crowdsourcing	Financial	Not restricted	General public	Limited	Idea generation	Copa Wein & Delbar	Business Lunch
5	DACH	Foods	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Unser Aller	Snack
6	DACH	Cosmetics	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Hibiscarin	Gesichtsreinigungsset
7	DACH	Cosmetics	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	dm Drogeriemarkt	Balea Dusche
8	DACH	Cosmetics	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Unser Aller	Badebombe
9	DACH	Cosmetics	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Manhattan	Nagellack
10	DACH	Foods	Design change	Crowdsourcing	Financial	Restricted	General public	Limited	Concept development and testing	Haribo	Goldbaren Fan-Edition
11	DACH	Foods	Gain in know-how	Crowdsourcing	Financial	Restricted	Corporation	Limited	Test marketing	Kühne	Salatlust
12	DACH	Foods	Gain in know-how	Crowdsourcing	Financial	Restricted	Corporation	Limited	Test marketing	Die gute Schokolade	Meinungsstudie
13	DACH	Cosmetics	Gain in know-how	Crowdsourcing	Financial	Restricted	Corporation	Limited	Test marketing	NIVEA	Cellular Perfect Skin
14	DACH	Foods	Gain in know-how	Crowdsourcing	Financial	Restricted	Corporation	Limited	Test marketing	Darbo	Teesirup
15	DACH	Foods	New product development	Co-designing	Financial	Restricted	Corporation	Limited	Test marketing	Kelly's	Chipsline NXT
16	DACH	Lifestyle	New product development	Co-designing	Financial	Restricted	Corporation	Limited	Test marketing	Tyrolit	Messerschleifer
17	DACH	Fashion	New product development	Co-designing	Financial	Not restricted	General public	Unlimited	Concept development and testing, Product development	Spreadshirt	Design a shirt
18	DACH	Foods	New product development	Co-designing	N/A	Restricted	General public	Limited	Concept development and testing	Danone	Fruchtzwerge
19	Europe (excl. DACH)	Fashion	Design change	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	Burberry	Bespoke (Trench Coat)
20	DACH	Foods	Design change	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	Chocri	Meine Schokolade
21	DACH	Foods	New composition	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	mynewsli	Individuelles Blomüsl
22	DACH	Foods	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Rittersport	Die Blogschokolade
23	DACH	Foods	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Coca Cola	Design+ Award
24	DACH	Fashion	Design change	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	adidas	miKiddas
25	DACH	Foods	New product development	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Ricola	Limited Edition
26	DACH	Fashion	Design change	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	Dream Heel	Traumschuh
27	Europe (excl. DACH)	Foods	New product development	Co-designing	Financial	Not restricted	General public	Limited	Idea generation, Concept development and testing	Heineken	Ideas Brewery
28	DACH	Lifestyle	New product development	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	Hem	Konfigurieren
29	Europe (excl. DACH)	Technology	New product development	Crowdsourcing	Technological	Not restricted	General public	Limited	Concept development and testing	Fiat	Mio
30	DACH	Technology	New product development	Crowdsourcing	Technological	Not restricted	General public	Limited	Idea generation	BMW	Co-Creation Lab
31	Europe (excl. DACH)	Technology	New product development	Co-designing	Technological	Not restricted	General public	Limited	Idea generation, Concept development and testing	Peugeot	Concours Design
32	DACH	Technology	New product development	Crowdsourcing	Technological	Not restricted	General public	Limited	Idea generation, Concept development and testing	Oscar	reInvent mobility
33	DACH	Technology	New product development	Crowdsourcing	Technological	Not restricted	General public	Limited	Concept development and testing	Audi	Virtual Lab
34	DACH	Lifestyle	New product development	Co-designing	Social	Not restricted	General public	Unlimited	Idea generation, Concept development and testing, Product development	DaWanda	Products with love
35	Europe (excl. DACH)	Lifestyle	New product development	Co-designing	Financial	Not restricted	General public	Unlimited	Idea generation, Concept development and testing	Lego	Lego Creator
36	Europe (excl. DACH)	Lifestyle	New product development	Co-designing	Financial	Restricted	General public	Limited	Idea generation, Concept development and testing	Electrolux	Designlab
37	Europe (excl. DACH)	Technology	New composition	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	Ducati	Design your dream Ducati
38	Europe (excl. DACH)	Lifestyle	New composition	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	KEA	Home Planner
39	DACH	Lifestyle	Design change	Co-designing	Financial	Not restricted	General public	Limited	Concept development and testing	Henkel	Packaging Design Contest
40	DACH	Fashion	Design change	Mass customization	Social	Not restricted	Creator	Unlimited	Product development	ANNA Inspiring Jewellery	Design your bracelet

**Table 5: Summary of the conducted study**

Source: own illustration

### ***Appendix III – Eidesstattliche Erklärung***

#### **EIDESSTATTLICHE ERKLÄRUNG**

„Ich erkläre hiermit an Eides Statt, dass ich die vorliegende Arbeit selbstständig und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe. Die aus fremden Quellen direkt oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht. Die Arbeit wurde bisher in gleicher oder ähnlicher Form keiner anderen Prüfungsbehörde vorgelegt und auch noch nicht veröffentlicht.“

Lena Schmatzer

Wien, im Juni 2015

## ***Appendix VI – Abstract (English)***

Consumer co-creation in the NPD process has become a focal point for corporations as well as for scientific research. An answer to the highly dynamic and competitive environment in the world markets, which results from globalization, also affects companies and their new product development strategies. A novel product development strategy that has increasingly been applied by corporations in the last decade strives for exploiting consumers' ideas, know-how and creativity. The relevant topics like NPD and consumer co-creation were observed and analyzed separately. Hence, this master thesis aims to deliver a holistic approach by conducting a literature review and a study of the European market.

Keywords: consumer co-creation, New Product Development (NPD), definitions, incentives, forms of consumer co-creation



## ***Appendix V – Abstract (German)***

Die Beteiligung der Kunden an Produktentwicklungsprozessen (co-creation) ist sowohl in der Unternehmensumwelt als auch in der Wissenschaft in den Fokus gerückt. Hier spielen hoch dynamische und wettbewerbsintensive Märkte, vor allem bedingt durch die zunehmende Globalisierung, eine wichtige Rolle für Unternehmensstrategien. Unternehmen haben in der strategischen Ausrichtung von Neuproduktentwicklungsprozessen in den letzten Jahren zunehmend mehr auf die Einbindung von Ideen, Know-how und Kreativität von Kunden gesetzt. Hierbei wurden die relevanten Themen der Neuproduktentwicklungsprozesse und der co-creation unabhängig voneinander untersucht. Daher zielt diese Masterarbeit mit dem Einsatz von Literaturanalyse und einer empirischen Studie darauf ab einen gesamtheitlichen Überblick über die Thematik zu liefern.

Keywords: consumer co-creation, New Product Development (NPD), definitions, incentives, forms of consumer co-creation

## Appendix VI – Curriculum Vitae

# LENA SCHMATZER

### PERSÖNLICHE INFORMATIONEN

---

Adresse: Sechsschimmelgasse 24/9,  
1090 Wien, Österreich

Telefon: +43 699 17 07 58 66

E-Mail: lena.schmatzer@gmail.com

Geburtstag: 10. Mai 1986

Nationalität: Österreich



### BERUFSERFAHUNG

---

09/2014 – 06/2015	<b>Siemens AG Österreich, Wien (Österreich)</b>
07/2014 – 08/2014	<b>Siemens SAS, Paris (Frankreich)</b> Praktikum/Werkstudentin im Light Rail Bid Department
10/2012 – 06/2014	<b>Siemens AG Österreich, Wien (Österreich)</b> Werkstudentin im Light Rail und VAL Department
11/2011 – 09/2012	<b>Siemens AG Österreich, Wien (Österreich)</b> Assistentin (Vollzeit) der kaufmännischen Werksleitung
07/2011 – 09/2011	<b>Siemens AG Österreich, Wien (Österreich)</b> Praktikum in der kaufmännischen Werksleitung
07/2010 – 09/2010	<b>10envolvimento, Barreiras (Brasilien)</b> Mitarbeit bei diversen Entwicklungsprojekten mit Fokus auf humanitäre und umweltbezogene Themen in der Region von Bahia
07/2008 – 07/2008	<b>STRABAG AG, Wien (Österreich)</b> Praktikum im Einkauf
07/2007 – 09/2007	<b>AEM, Pasching (Österreich)</b> Praktikum im Event Management
09/2005 – 09/2005	<b>Au-pair Aufenthalt (Monaco)</b> Unterstützung einer monegassischen Familie
07/2004 – 07/2004	<b>STRABAG AG, Linz (Österreich)</b> Praktikum in der Abteilung für Hochbau
07/2003 – 07/2003	<b>Schloss Schönbrunn Kultur- und Betriebsges.m.b.H., Wien</b>
07/2002 – 07/2002	Praktikum im Kultur- und Eventmanagement

## **BILDUNGSWEG**

---

10/2012 – 05/2015	<b>Universität Wien (Österreich)</b> Studium: International Business Administration Spezialisierung: International Management and e-Business Academic Excellence Stipendium in 2013 Abschluss: Master of Science (vsl. Note 1,5 / “Sehr gut”)
09/2009 – 12/2009	<b>Queen’s University, Kingston (Kanada)</b> Auslandssemester im Rahmen des Joint Study Programs Spezialisierung: Cross-cultural Management Kurse, International Business and Marketing
10/2006 – 06/2011	<b>Wirtschaftsuniversität Wien (Österreich)</b> Studium: International Business Administration Spezialisierung: Cross Functional Management Abschluss: Bachelor of Science (Note 2,4 / “Gut”)
10/2005 – 06/2006	<b>Universität Wien (Österreich)</b> Studium: Übersetzung Englisch und Französisch (Kein Abschluss)
04/2004 – 05/2004	<b>EU Schulprojekt, Resita (Rumänien)</b> Kulturelles Austauschprojekt mit einer Schule in Resita
09/2000 – 05/2005	<b>HLW für Kultur- und Kongressmanagement, Steyr (Österreich)</b> Abschluss: Allgemeine Hochschulreife

## **ZUSATZQUALIFIKATIONEN & INTERESSEN**

---

Sprachkenntnisse:	Deutsch (Muttersprache) Englisch (Verhandlungssicher) Französisch (Fließend in Wort und Schrift) Italienisch (Grundkenntnisse) Portugiesisch (Grundkenntnisse)
EDV-Kenntnisse:	MS Word, Excel & PowerPoint (Sehr gute Kenntnisse) SAP ERP (Grundkenntnisse)
Ehrenamtliche Tätigkeiten:	Gründungsmitglied des “Global Helpers e.V.”, einer Entwicklungsprojekte-Organisation, welche Bildung für junge Menschen in Entwicklungsländern fördert
Persönliche Interessen:	Kultur, Reisen, Fremde Kulturen, Lesen, Internationale Küche



Wien, Juni 2015