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MASTER THESIS

THE ROLE OF ONLINE CONSUMER CO-CREATION IN NEW PRODUCT DEVELOPMENT IN THE GERMAN FOOD INDUSTRY: FIRM DRIVERS AND IMPEDIMENTS IN ENGAGING IN THIS TREND

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LIST OF ABBREVIATIONS

e.g.	exempli gratia
NPD	New product development
PR	Public Relations
R&D	Research and development
SME	Small and medium-sized enterprises
QM	Quality management

STATEMENT OF ORIGINAL AUTHORSHIP

I herewith declare that this dissertation is my own work and that I have marked other people's work.

ACKNOWLEDGMENTS

This research is the final assignment of the M.Sc. program in Business Administration offered by the university of Twente in Enschede, the Netherlands.

The author of this report is Stefanie Grace Gunia, a student from Germany, who has worked in the marketing departments of several food industries next to her studies. She has a strong passion for the food industry and also focused her bachelor thesis on this industry by analyzing Starbucks Coffee Germany's quality management concept at that time and giving recommendations on how to improve certain processes in order to guarantee product safety. The outcome of her thesis was the HACCP-concept for all German Starbucks stores.

In her master thesis she wanted to combine her fields of interest (Marketing/ the food industry/ innovation and NPD) and therefore she decided to analyze the phenomenon of customer co-creation in new product development in the German food industry.

Special acknowledgements for their support and assistance during the process of this report go to Dr. Constantinides and Dr. Ehrenhardt. Furthermore, she wants to thank all parties, who have contributed with their knowledge to this research, namely:

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Last but not least she wants to thank everyone who supported and especially motivated her to finish her master thesis next to her demanding fulltime position as marketing specialist Germany & Austria for an international retail brand, which she accepted during the process of this thesis.

MANAGEMENT SUMMARY

This research seeks to analyze the drivers, as well as impediments of companies in regards to consumer co-creation within the new product development process. The research focuses on companies from diverse sub-sectors operating in the German food industry and aims at understanding patterns in willingness to actively engage consumers in the new product development process.

The food sector is one of the most important industries in Germany and can be characterized as traditional and mature (Christensen, Rama, von Tunzelmann, 1996; Sarkar & Costa, 2008). According to scholars, new product development (NPD) is a critical success factor in the food industry in order to achieve a competitive advantage (Grunert, Harmsen, Meulenberg, Kuiper, Ottowitz, Declerck, Traill, Göransson, 1997). However, this industry has lower research intensity than other industries (Grunert et al., 1997; Costa & Jongen, 2006) and therefore there is significant innovation potential within this industry.

NPD is one of the most important growth strategies for companies. Traditionally, market research is used to reveal what the customers want and this knowledge and the information then is translated into actual products. According to literature a lot of new products-, which are mostly incremental innovations-, are not commercially successful. Since changes in consumer behavior are one of the key drivers of innovation in this sector and since consumers nowadays want to take an active part (Hoyer, Chandy, Dorotic, Krafft, Singh, 2010), this study seeks to analyze in more detail in what way consumers can contribute to the NPD process in order to make it more successful.

Customers can contribute to a great extent to the innovation process within the NPD trough co-creation, which is “an active, creative and social collaboration process between producers (retailers) and customers (users), facilitated by the company. Customers become active participants in an open innovation process of a firm and take part in the development of new products or services” (Piller, Ihl, Vossen, 2010, p.1). Through co-creation, the company can reveal the true needs of the consumer and can translate these needs into new products. However, consumer co-creation is not as much used as in other countries. Despite that, some cases of

consumer co-creation can be found in the German food industry. This research investigates why some companies are more willing to engage in co-creation activities in their NPD processes than others and if they have a different mindset than other companies.

Literature provides several drivers, as well as impediments, for engaging in consumer co-creation. Co-creation can have several benefits for the company. For example, it can increase the likelihood of the new product's success, because customers share their truly needs and wants with the company and therefore the company can develop and customize the products accordingly. Furthermore, it can improve product quality due to fewer errors, reduce risks associated with launching new products, and it can increase market acceptance, because the new products reflect customer's wants and needs (Hoyer, Chandy, Dorotic, Krafft, Singh, 2010). Moreover, through the two way communication the company can build a closer relationship with their customers (Ciccantelli, Magidson, 1993). However, literature also mentions impediments, which could hinder the company to integrate consumer co-creation, such as loss of control, secrecy concerns, sharing of intellectual property, information overload, product infeasibility (Hoyer et al., 2010), as well as product infeasibility and unprofitability (Trott, 2005).

The results from the company professionals, which were interviewed, however show that most by literature indicated drivers are not valid in the German food industry. By comparing the main impediments, one can say that they are all represented by the German food market, except the aspect, that consumer co-creation can be unprofitable.

Therefore, the main key findings are:

The generation of ideas and the increase of market acceptance are the main drivers.

Companies operating in the German food sector mainly engage in consumer co-creation to gather new ideas and to increase market acceptance of the new product. Furthermore they mention that consumer co-creation can be a great PR tool, which has not been mentioned in literature yet.

Information overload, product infeasibility and loss of control are the main impediments.

The main impediments, mentioned by most cases, are information overload, product infeasibility and loss of control. Companies fear that they receive too much input from consumers, which takes a lot of work to screen through. Furthermore, they are afraid, that consumers make proposals, which are not feasible for the company. And since most of the co-creation initiatives yield to produce the winner product, they are impeded that they might have to produce a product, which for example does not fit their brand essence or which cannot be produced with the current circumstances, e.g. machines and suppliers. Additionally most companies are afraid to loose control over the co-creation initiative in any way, which can also for example lead to a loss of brand essence. Furthermore, some companies mentioned that such a co-creation initiative is an additional project entering the daily business, which takes up a lot of manpower. Additionally it was mentioned by one company that they fear to share secrecy concerns and intellectual property. They do not know how much information they need to disclosure in order to generate a successful product.

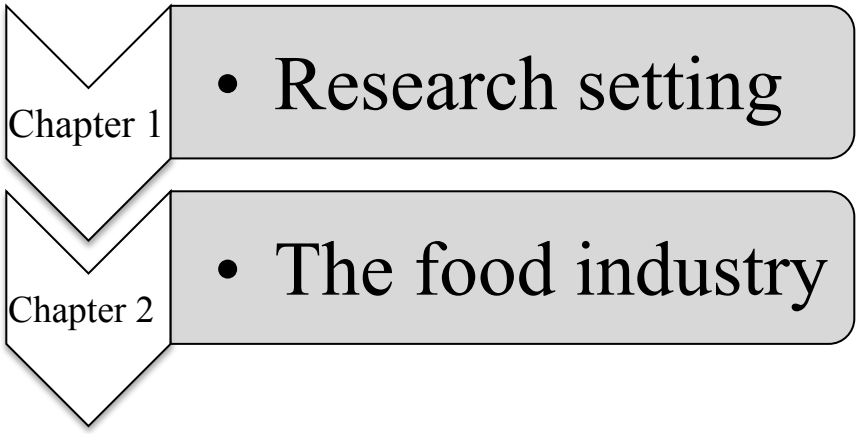
The readiness for consumer co-creation depends on the business life stage of the company.

Companies in the start-up and growth phase have other priorities, such as building up their brand awareness nationwide. Furthermore, they mentioned that they are overwhelmed with the thought of integrating co-creation in their business operations at the moment. This has several reasons, such as (a) their NPD process is not made for integrating consumers in it, (b) they have no experience with interacting with consumers yet, and therefore do not have an idea which consumers to involve and (c) a change of mindset of the employees is required. Companies in the upper business life stages show more experience with incorporating consumers in their business operations and therefore a co-creation initiative is not that difficult for them to integrate.

Keywords: Co-Creation, New Product Development, Food Industry, Consumer, Germany

PART I INTRODUCTION

The first part of this thesis deals with the research setting, as well as with a description of the food industry. Background of this research is given in chapter 1. Furthermore the research objective and the research questions are described and explained in detail followed by an overview about the research method. Moreover, the motives and contributions of this research are defined. The second chapter deals with the food industry, in particular the German one, including its characteristics, a description of the innovation process and the role of the consumer within this industry.



1. Research Setting

1.1 Background of the research

Companies nowadays are facing increased globalization and due to the fast-changing environment the need for innovative products is increasing. Organizations understand the importance and need of creating and sustaining a competitive advantage through collaboration, with for example, partners, but also with suppliers (McGinnis, Vallopra, 1999; Ragatz, Handfield, Petersen, 2002). Recent studies in the marketing field have additionally found out the importance of collaborating with customers in order to be successful and innovative (Prahalad, Krishnan, 2008; Sawhney, Verona, Prandelli, 2005; Thomke, von Hippel, 2002). Technology has empowered customers, making it possible for them to access unlimited information on the world wide web as well as communicate and exchange knowledge with other customers and companies all over the globe (Wikström, 1996). They are able to easily contribute ideas for new products, as well as give suggestions of improvement of already existing products virtually (Hoyer, Chandy, Dorotic, Krafft, Singh, 2010). The Internet, as a platform for customers sharing their ideas, is characterized by its interactivity, reach, persistence, as well as speed and flexibility (Sawhney et al., 2005) and it allows companies to interact with an unlimited number of customers. This consumer empowerment can, if done correctly and encouraged by the organization, lead to consumer co-creation, which is "an active, creative and social collaboration process between producers (retailers) and customers (users), facilitated by the company. Customers become active participants in an open innovation process of a firm and take part in the development of new products or services" (Piller, Ihl, Vossen, 2010, p.1).

Co-creation is different to other measures of gathering and using customer input for new product development (NPD). The basic idea, for example behind gathering customer input through market research, is to approach and ask representative customers; in other words to find a sample that represents the whole population, which is a costly and time-consuming process. This leads to customer insights, but other than with co-creation, it does not represent a source of radical innovation. The approach of traditional market research "is often not a good predictor of success" (Kandybin, 2009), because it will lead to longer time to market and, as mentioned before, to incremental and rather small innovations.

Besides the radical innovation aspect, engaging in co-creation can have several benefits for the company. Because customers share their truly needs and wants with the company, the company can customize the products accordingly, which increases the likelihood of the new product's success. Furthermore, it can improve product quality due to fewer errors, reduce risks associated with launching new products, and it can increase market acceptance, because the new products reflect customer's wants and needs. (Hoyer, Chandy, Dorotic, Krafft, Singh, 2010).

Despite the benefits, co-creation is not as much used in Germany yet, as in other countries. Especially the food sector entails crowdsourcing and co-creation potential. This sector is one of the most important industries in Germany, with a turnover of € 149.1 billion in 2009. In the around 5,800 food businesses more than 535,000 people were employed (Fraunhofer Institute for Process Engineering and Packaging and the Technical University Munich, 2010). NPD is significantly important in this industry, because it is "widely regarded as an essential element of competition between food companies, and the successful management of new product development (is) a key determinant of business performance" (Grunert, Harmsen, Meulenberg, Kuiper, Ottowitz, Declerck, Traill, Göransson, 1997, p.1). However, Grunert et al. also mention in their research, that the food industry has lower research intensity than other industries. Therefore, there is significant innovation potential, which is also supported by the study "Studie zum Innovationssektor. Lebensmittel und Ernährung"[1] about innovations in the food sector (Fraunhofer Institute for Process Engineering and Packaging and the Technical University Munich, 2010).

However, firms need information and guidance on how to assess which strategy is suited best for co-creation. Companies operating in the German food industry seem to be hindered by certain impediments, which do not motivate them to engage in co-creation and harvest the benefits. Possible impediments could be for example secrecy concerns, sharing of intellectual property, information overload and product infeasibility (Hoyer et al., 2010).

Some bigger German companies, such as Conditorei Coppenrath & Wiese and McDonalds, have noticed the importance and have engaged in co-creation activities recently. But why are some companies more willing to engage in co-creation activities in their NPD processes than others?

[1] The study was carried out jointly by the Fraunhofer Institute for Process Engineering and Packaging and the Technical University Munich. The project was financially supported by the German Federal Ministry of Education and Research.

Do they have a different management mind-set than other companies? What are the drivers and the impediments of co-creation?

1.2 Research objective

This research outlines the key drivers, as well as the impediments of engaging in co-creation on a company- level. The *goal* of this research is to provide implications for companies with regards to the usage of co-creation.

1.3 Research Problem

In order to be able to give practical implications with regards to the key success factors, as well as the impediments in engaging in co-creation from a firm's perspective the German food industry the following research question and its sub-questions are answered within this thesis:

Research Problem

What are the key drivers and impediments of online consumer co-creation within the incremental NPD process for companies in the German food industry?

Research questions

In order to be able to analyze the co-creation possibilities for companies, a general understanding of co-creation is required. Therefore, the first research question aims at giving an overview of co-creation:

1. *What is co-creation?*

Since the first sub-question yields a broad scope of the phenomenon, a more specific analysis is necessary, focusing on online co-creation as well as on B2C markets, in order to get valuable input for answering the above-mentioned central research question:

2. *What are the online co-creation trends in B2C markets?*

The next step in the research is to analyze the current situation in the food industry in regards to innovativeness and customer co-creation, which will be done through literature review. Existing literature has identified a reorientation from technological developments to a more demand-focused product-oriented industry. This shift includes incremental, as well as radical innovations. Incremental innovation incorporates the improvement of already existing products, while radical "refers to radically new products that involve dramatic leaps in terms of customer familiarity and use" (Veryzer, 1998, p. 305). The following research question therefore provides an extensive analysis of the NPD process in this industry, identify the volume of the types of innovation, researches the importance of co-creation for the German food industry, as well as identifies methods currently used to involve customers:

3. *What is the current situation in the German food industry in regards to consumer co-creation initiatives?*

After these first three research questions, which are descriptive in nature, it is necessary to gather information directly from the German food industry. Therefore, explanatory questions are necessary. The first one is aiming at exploring the drivers and impediments of co-creation for these companies. Some bigger German food companies have engaged in co-creation activities recently, but most companies are not willing to make use of co-creation. They seem to be hindered by certain impediments, such as for example information overload and product infeasibility, which do not motivate them to engage in co-creation and harvest the benefits. It will be explored why some companies engage in co-creation and what hinders others to use it.

4. *Which drivers and impediments of co-creation do companies operating in the food industry face?*

1.4 Research method

In order to answer the research problem "What are the key drivers and impediments of online consumer co-creation within the incremental NPD process for companies in the German food industry?" a literature review, as well as an empirical study are conducted. For the first part, literature is retrieved from published books, as well as internationally peer-reviewed articles. For the empirical part, an exploratory qualitative study of the German food industry is carried out,

because the subject of the study has not been extensively researched yet and it is aiming at getting new insights into the topic. Exploratory studies have three purposes: "(1) to satisfy the researcher's curiosity and desire for better understanding, (2) to test the feasibility of undertaking a more extensive study, and (3) to develop the methods to be employed in any subsequent study" (Babbie, 2010, p. 92). This approach is used to derive patterns in engaging in and avoiding co-creation. The grounded theory is used and the units of analysis are companies located in Germany and operating in the food industry. As in traditional qualitative approached, it is relied on a rather small number of companies to develop the insights. In order to gather relevant and useful data and to identify emergent themes in co-creation, case studies with semi-structured interviews with company experts are conducted. Companies from a variety of branches within the food market, representing the sample, were contacted in order to give a good overview of the German food landscape. The interviews are recorded and later transliterated for the actual analysis. In order to translate the information from the expert interviews into useful and correct data, the coding-method is used. In the process of coding, the researcher is "classifying or categorizing individual pieces of data" (Babbie, 2010, p. 400). This will bring the collected information in a suitable form, in order to analyze and interpret them for the purpose of reaching a conclusion to the research question.

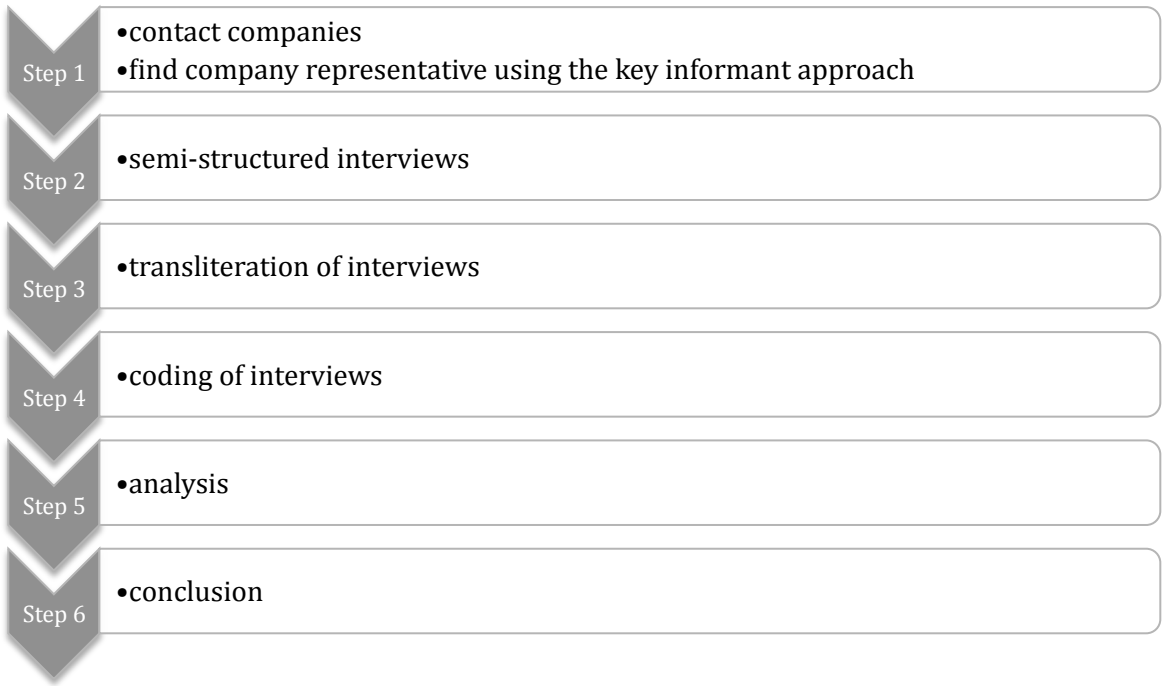


Figure 1: Illustration of Research Model

Source: developed for this research.

1.5 Theoretical and practical contribution

The phenomenon of co-creation, despite its importance, is not well understood and researched yet (Wikström, 1996; Hoyer et al., 2010). Most of the research focuses on the B2B context, because involving customers in the B2C markets is a more challenging task, because companies have to deal with heterogeneity, as well with customers living in different locations all over the globe. Co-creation can lead to less product failures in the German food industry, therefore, this research will not only be a theoretical, but also a practical contribution to the academic and management society. It will give useful guidance to the management of firms operating in the German food industry on which co-creation activities are most suitable for them. Furthermore, it should inform them about the benefits of co-creation and the managerial implications should motivate more companies in Germany to engage in co-creation initiatives.

1.6 Outline of the report

The first chapter introduces the master thesis by describing the background, problem definition, and the research objective (chapter 1). The second chapter gives an extensive overview of the German food industry, including characteristics of this sector, the innovation process and the role of the customer. The following chapter gives a review of already existing literature on new product development, including an overview about the process and the different types of innovation. Furthermore it deals with co-creation, describing its structure, benefits, virtual customer co-creation initiatives as well as organizational requirements. Chapter 4 gives information about the research design, including the research approach, as well as the data collection phase. The results of the interviews are explained in chapter 5. Chapter 6 provides a conclusion on the research question and the last chapter deals with the discussion and recommendations.

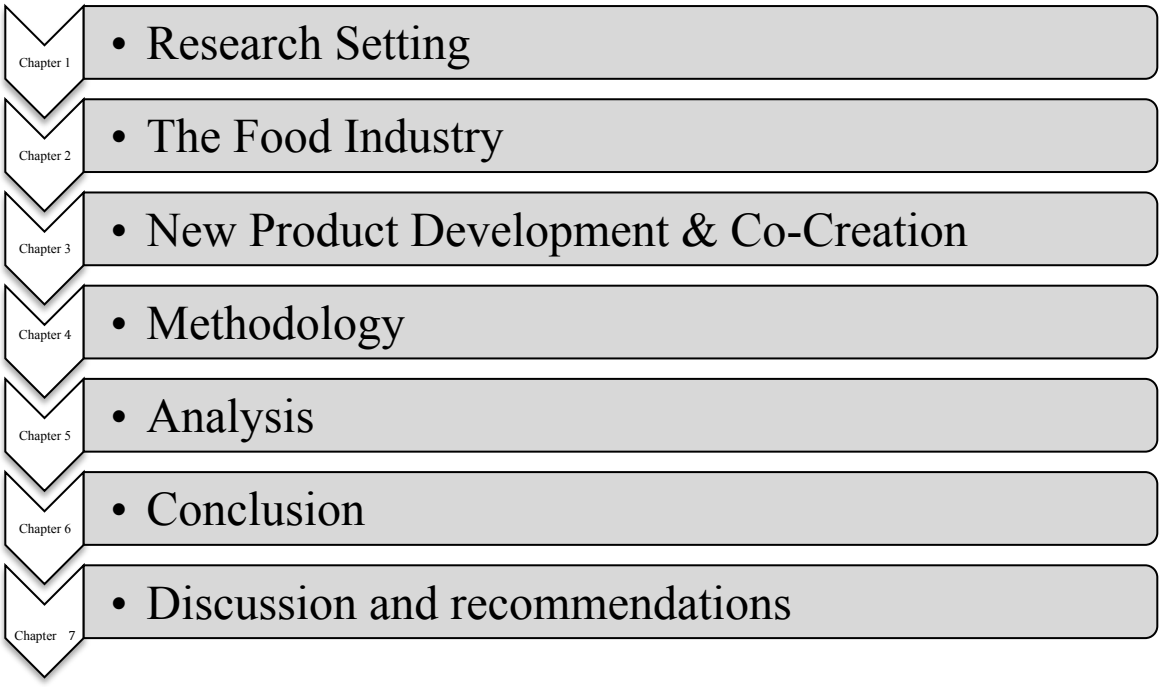


Figure 2: Illustration of the chapters

Source: developed for this research.

1. 7 Delimitations

There are major limitations of the case study design, namely external validity, construct validity, and internal validity. It is not possible to make casual references from case studies, because the generality of the findings is questionable, since a case study represents the behavior and views of one entity and it may or may not reflect the views and behaviors of others. For this reason, cases from different sectors of the German food industry have been studied, which increases the external validity. Furthermore, case studies have the threat of internal validity, because it is difficult to rule out all competing explanations for the proposed relationships. Construct validity is about "the measurement of phenomena" (Van Aken, Berends, van der Bij, 2007, p. 164). In order to limit this threat, measuring instruments, such as the interview questions, were assessed by an expert from a market research institute, before the interviews were conducted. Furthermore, this expert gave the researcher a soft skill workshop "Fragen richtig stellen" about how to ask the right questions on 29th January. Another limitation of this research is the narrow amount of cases, due to limited time and financial scope.

2. The food industry

2.1 Introduction

The food sector is one of the most important industries in Germany, with a turnover of € 149.1 billion in 2009. In the around 5,800 food businesses more than 535,000 people were employed. 90% of the food businesses in Germany are small and medium-sized enterprises (SME) with less than 250 employees and a turnover of 50 million euro maximum. They generate 36% of the total industry turnover, but they employ about 50% of the total number of employees. Big companies with over 1000 employees generate about 30% of the total industry turnover with an employment rate of 19%. The German food industry has a significant proportion of manual production with 26.000 companies and 291.000 employees. The export in this sector is constantly growing and food products made in Germany have a positive image worldwide, because they have the reputation to be safe and of superior quality. 84% of the exports are delivered to states of the European Union (Fraunhofer Institute for Process Engineering and Packaging and the Technical University Munich, 2010). Germany is, next to France, Italy, the UK and Spain, the largest food and drink producer in the European Union (FoodDrinkEurope, 2014). New product development (NPD) is significantly important in this industry, because it is "widely regarded as an essential element of competition between food companies, and the successful management of new product development (is) a key determinant of business performance" (Grunert, Harmsen, Meulenberg, Kuiper, Ottowitz, Declerck, Traill, Göransson, 1997, p.1). However, Grunert et al. also mention in their research, that the food industry has lower research intensity than other industries, which is also supported by several other researchers (Costa & Jongen, 2006). Therefore, there is significant innovation potential, which is also supported by the study "Studie zum Innovationssektor. Lebensmittel und Ernährung"[2] about innovations in the food sector (Fraunhofer Institute for Process Engineering and Packaging and the Technical University Munich, 2010).

[2] The study was carried out jointly by the Fraunhofer Institute for Process Engineering and Packaging and the Technical University Munich. The project was financially supported by the German Federal Ministry of Education and Research.

2.2 Characteristics of this sector

The German food sector is diverse and classified into the following sub-sectors by FoodDrinkEurope (2014):

- Meat products
- Drinks
- Dairy products
- Bakery and farinaceous products
- Animal feeds
- Processed fruit and vegetables
- Oils and fats
- Grain mill and starch products
- Fish products
- Various food products (such as cocoa, chocolate and sugar confectionery; tea and coffee; prepared meals and dishes; sugar)

It is viewed as a traditional and mature industry (Christensen, Rama, von Tunzelmann, 1996; Sarkar & Costa, 2008) and it is therefore characterized as having a strong focus on the German market. Furthermore the knowledge generation system as well as the co-operation initiatives are mainly Germany-oriented (Menrad, 2004).

2.3 The innovation process in the German food sector

Innovation is a "complex phenomenon, involving the production, diffusion and translation of scientific or technical knowledge into new or modified products and services as well as new production or processing techniques" (Menrad, 2004, p.846). The German food market is rather stagnant and therefore changes in consumer behavior are one of the key drivers of innovation (Menrad, 2004). Although this industry has a low research intensity, innovations, such as new products, processes or sevices, are highly important in order to stay competitive (Menrad, 2004).

Until the 1980s, the linear sequential model was mostly applied in the innovation process. This early model of innovation claims, that innovation starts with basic research, followed by applied research and ending with the actual production and diffusion (Godin, 2006). There has been a lot

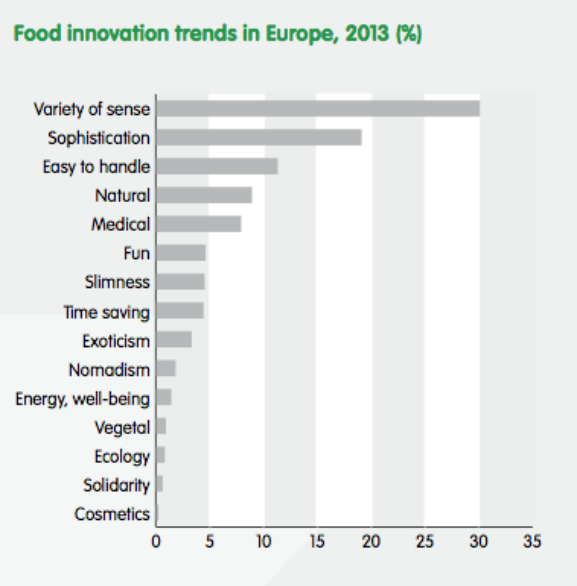
of criticism about this model, such as, that it is highly necessary to incorporate feedback mechanisms in order to tackle divergent information, uncertainty about future developments and set-backs during the innovation process (Menrad, 2004). During the 1980s coupling models in the innovation process took over, which did not follow a strict path from phase to phase and rather followed “recursive and reflexive combinations of the different phases of the innovation process” (Menrad, 2004). Critics say about the couplings models, that it is not possible to predict the needed time frames for the steps of the innovation process. The models of the innovation process during the 1990s, focused on a network approach. Interactions between different actors, strategic partnerships (e.g suppliers, research institutions, customers, competitors), as well as for example technological developments were integrated into these models.

This development of the innovation process models shows, that innovation is not a linear development. Feedback mechanisms and interactions between different actors are important features of the innovation process. Furthermore, this process is influenced by many factors, such as technological developments. All these facts show, that innovation does not occur in isolation; there is a high relevance of strategic co-operation among different actors, such as suppliers, research institutions, customers, competitors, investment companies and government agencies. Also the external environment, such as laws, cultural and social norms and technical standards, plays a part in the innovation process (Menrad, 2004).

Nowadays, research and development (R&D) activities are carried out by private companies and public research institutions, which are an important part of the knowledge base in the German food industry. A major source of innovation activities are the internal R&D departments of industrial companies (Menrad, 2004). However, SME, which have a high relevance in Germany, do not engage that often in R&D when compared with larger companies and often do not even have R&D departments.

Companies are focusing their innovation activities on market possibilities and the need of the customer (Menrad, 2004). According to FoodDrinkEurope (2014), consumer expectations are driving innovation and pleasure, including variety of sense and sophistication, is the main driver of innovation in 2013, followed by health and convenience. But also criteria, such as price, safety and values are important for the customer to decide to buy the product (Fraunhofer Institute for Process Engineering and Packaging and the Technical University Munich, 2010).

Therefore it is important to also consider these in new product development in order to create a product, which is sustainable on the market. The most innovative food sector is dairy products, followed by ready-made meals and soft drinks.



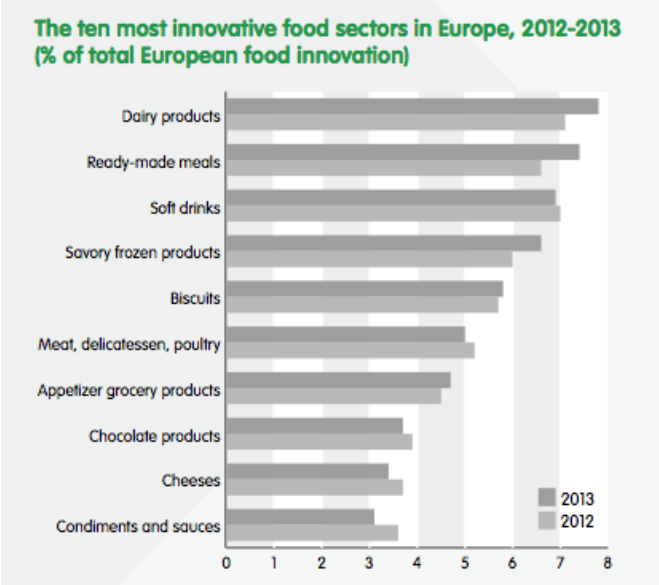


Figure 3 & 4: Food innovation trends in Europe, 2013 (%) and The ten most innovative food sectors in Europe, 2012-2013 (% of total European food innovation)

Source: FoodDrinkEurope (2014).

However, several researchers have found out, that there is a high rate of product failure in the food industry (Costa & Jongen, 2006; Menrad, 2004; Martinez, Briz, 2000). A successful innovation can be defined as one who “leads to customer engagement and profits” (Kandybin, 2009, p. 53). A study by the market research institute Madakome GmbH analyzed the launch of new products in food retailing stores in Germany. This outcome supports the high product failure rate.

Food category	Total number of products	New products	Innovation rate (%)	Withdrawn products 2001	Retraction rate 2001 (%)	Average retraction rate 1998– 2001 (%)
Baby food	1160	163	14.1	69	42.3	35.1
Dairy products	5666	852	15.0	407	47.8	42.4
Cheese	3056	526	17.2	203	38.6	48.9
Meat, sausages, fish	4601	439	9.5	275	62.6	59.5
Bread and cakes	4019	670	16.7	453	67.6	60.5
Cereals	1515	297	19.6	170	57.2	52.0
Marmelade	2932	499	17.0	358	71.7	61.9
Salted biscuits	2251	464	20.6	249	53.7	52.5
Sweet biscuits	4183	840	20.1	604	71.9	69.1
Confectionery	4364	847	19.4	499	58.9	58.7
Chocolates	6265	1152	18.4	813	70.6	69.7
Pre-prepared food	3183	525	16.5	300	57.1	51.3
Canned food	7066	916	13.0	540	59.0	57.2
Frozen food	7292	1217	16.7	683	56.1	52.7
Dietetic food	2116	143	6.8	92	64.3	49.5
Pasta, rice	3736	673	18.0	423	62.9	61.6
Fat, spreads	1705	261	15.3	163	62.5	64.7
Soups, sauces	3325	523	15.7	343	65.6	56.4
Spices	8531	943	11.1	715	75.8	64.0
Delicacies	2306	488	21.2	309	63.3	52.4
Bakery additives	2774	271	9.8	177	65.3	53.2
Hot beverages	3012	494	16.4	291	58.9	57.4
Non-alcoholic beverages	8904	2011	22.6	1266	63.0	53.1
Beer, wine	23,504	4876	20.7	4070	83.5	72.2
Spirits	6556	834	12.7	682	81.8	74.5
Total	124022	20924	16.9	14154	67.6	n.a.

Table 1: New food products in food retailing stores in Germany in 2001

Source: Madakam (2001).

But it is not just the case with product launches. A lot of projects fail even before the introduction, which is costly and takes up a significant amount of time (Van der Valk, Wynstra, 2005). A reason for the high failure rate of product innovations could be that companies are not actively listening to the customer's preferences and then trying to match these requirements to create new products. In other words, they are not creating immediate and perceived value for the consumers. Menrad (2004) mentions in his research, that SMEs involve customers too less in their innovation activities and that establishing external knowledge and competence networks are a priority for SMEs in the food industry in the coming years.

	THE TRADITIONAL PERSPECTIVE—CUSTOMER ENGAGEMENT IN PHYSICAL ENVIRONMENTS	THE CO-CREATION PERSPECTIVE—CUSTOMER ENGAGEMENT IN VIRTUAL ENVIRONMENTS
Innovation Perspective	Firm-centric	Customer-centric
Role of the Customer	Passive—customer voice as an input to create and test products	Active—customer as a partner in the innovation process
Direction of Interaction	One way—firm to customers	Two way—dialogue with customers
Intensity of Interaction	Spot—on a contingent basis	Continuous—back-and-forth dialogue
Richness of Interaction	Focus on individual knowledge	Focus on social and experiential knowledge
Size and Scope of Audiences	Direct interaction with current customers	Direct as well as mediated interactions with prospects and potential customers

Table 2: Key differences between customer collaboration in physical and virtual environments

Source: Sawhney et al. (2005).

The traditional development process can be described as trial and error cycle; the company passively acquires information about the customers wants and needs through a one-way interactions, which is mostly not complete. The next step for the company is to translate the gathered information into new products, which will then be used and tested by customers. When customers find faults, then some of them approach the company and demand improvements of the existing product (Thomke, von Hippel, 2002). Consumer input is rather restricted, because the input of the consumer is limited to either acceptance or rejection of the product (Wikström, 1996).

According to Menrad (2004) and several other researchers, radical innovations are not used that much in the German food industry and therefore most of the innovations are incremental innovations. This is because the food industry views their customers as conservative, especially in regards to radical product innovations (Sakar & Costa, 2008). Customer's food preferences are rather stable, leading to new product reluctance, which in turn imposes a barrier to innovation (Costa & Jongen, 2006). The rather conservative customers, as well as the strict safety regulations in the German market, make it a tough market for food product innovations in terms of riskiness and the long time-to-market span (Sakar & Costa, 2008). However, there is pressure to be innovative in order to stay competitive in this market (Trott, 2005).

2.4 The role of the customer

The role of the customers in the market place has changed. Customers are considered to be "better educated, more collaborative and infinitely more resourceful" (Bhalla, 2010, p.4). The new customers are more informed and are exposed to a lot of alternatives. Therefore, they are able to make better buying decisions, but they also want to play a role in product decisions. Nowadays customers seek for and demand active participation and involvement; they can be, if encouraged by the company, co-producers of value and help the company to come up with ideas for new innovations (Wikström, 1996; Hutter, Hautz, Füller, Mueller, Matzler, 2011).

	Old Reality	New Reality
Identity	Consumers, respondents	Real people, creative partners
Role	Passive; consumers of value	Active collaborators; co-producers of value
Source of insights	Surveys, dispassionate objective observation	Conversations, stories, impassioned immersion
Handshake with company	Transactions-based	Interactions and experience-based
Location	Fixed and invisible; at one end of a long value chain	Adaptive and very visible; anytime, anyplace
Information and influence	Company advertising and messages; expert opinion	Word-of-mouth; peer-to-peer; social media
Concept of value	Company offers; one size fits all	Customer determines; tailored and unique
Primary source of value	What's in the brand; attributes and features	What customers do with the brand; unique solutions and customized experiences

Table 3: A profile of the new customer

Source: Bhalla, 2010.

The old reality of the customer represents the firm-centric view of innovation and value creation, in which the customer was passive, because innovation was considered to be an internal process. The R&D departments formerly created customer value and customers solely had a passive role in new product development. Nowadays through for example social media, customers are empowered to share opinions, experiences, ideas and knowledge with the companies (Constantinides, Brünink, Lorenzo-Romero, 2015). This represents the customer-centric view,

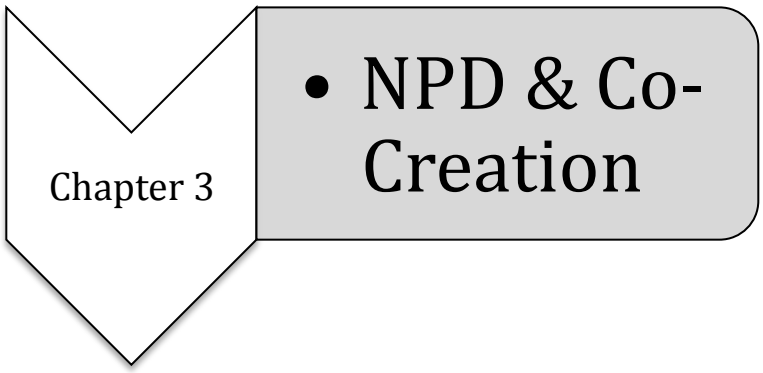
because innovation and value creation depend to a great degree on the collaboration with the customers.

2.5 Conclusion

The food industry is one of the most important industries in Germany and is mostly composed of SME. Due to the competitive environment, the need to be innovation is of significant importance for companies. However, a lot of new products-, which are mostly incremental innovations-, are not commercially successful. Since changes in consumer behavior are one of the key drivers of innovation in this sector, it is a valuable approach to look further and in more detail in what way customers can contribute to the NPD to be effective and successful.

PART II THEORETICAL FRAMEWORK

This part deals with the theoretical framework, especially the new product development and the phenomenon of co-creation. NPD is one of the most important organic growth strategies for companies. The stages of the NPD process will be described, as well as an explanation about the different types of innovation will be given. Co-creation is part of the NPD because it evolved out of the closed system of NPD. A throughout overview about co-creation, including its structure, benefits, virtual co-creation trends and organizational requirements which need to be met when a company decides to engage in customer co-creation is given. Furthermore, examples of companies from the German food industry will be given, as well as possible impediments for not engaging in co-creation found in literature.



3. New Product Development and Co-Creation

3.1 Introduction

In today's fast-changing environment, companies are facing increased globalization and its magnitude. The need for innovative products is increasing (Ragatz, Handfield, & Petersen, 2002), as well as the need for constant improvement of already existing product in order to stay competitive and gain a sustainable advantage (Schiele, 2006), which is significantly important in order to survive, be successful in the market place or to renew the company (Brown and Eisenhardt, 1995; Trott, 2005). NPD is "the process of transforming business opportunities into tangible products" (Trott, 2005, p.383). The NPD performance can be improved within the following three areas: faster development time, cost cutting and creating superior products (Valle & Vazques-Bustelo, 2009). Therefore, benefits of NPD include shorter product development (Rosenau, 1988; Van Engelen, Kiewiet, & Terlouw, 2001), as well as the option to charge a premium for a better or improved product, increased profitability and the option of a cheaper process (Rosenau, 1988). A successful NPD process is "vital for firms because it leads to high-quality short term and/ or long-term performance" (Chou, Yang, Jhan, 2015, p. 170). The NPD process has developed over a time, from a closed system to open innovation to co-creation. Co-creation is "an active, creative and social collaboration process between producers (retailers) and customers (users), facilitated by the company. Customers become active participants in an open innovation process of a firm and take part in the development of new products or services" (Piller, Ihl, Vossen, 2010, p.1). Co-creation is different to other measures of gathering and using customer input for new product development (NPD). The basic idea, for example behind gathering customer input through market research, is to approach and ask representative customers; in other words to find a sample that represents the whole population, which is a costly and time-consuming process. Furthermore, market research output often lacks completeness, because factors like imagination, personal meaning and contradictions, which help to alter ideas to consumer value, are removed. (Bhalla, 2010). Furthermore, through market research customers do have difficulties to articulate their real needs and it is almost impossible to gather data for radical product innovation ideas for which no market exists yet. By using the traditional ways of involving consumers in NPD, namely surveys, focus groups and questionnaires, the outcome is rather to find out what the customers do not want (Ciccantelli, Magidson, 1993). Co-

creation includes the opposite; customers are not constricted and have the freedom to probe their needs and preferences, which leads to a richer and more complete perception of how to create customer value. Trough co-creation, companies can reveal the true needs of the customers.

However, one might argue if customers are really able to contribute value through coming up with better ideas than experts of the firm. A study by Poetz and Schreier (2012) found out that customers outperform the experts significantly in terms of novel ideas and customer benefits attached to these ideas.

In order for companies to have a successful future, they will need to acquire knowledge and reveal customer's needs and translate this information into the development of new products (Trott, 2005). Especially the food industry makes use of market research for new product innovations (Trott, 2005). They usually use the market-pull approach to innovation, which is to find out first what the customers want and then to produce it.

3.2 New Product Development

Process

The NPD process starts at the initial stages with idea generation, idea screening and concept testing. In this early stage the new product is an idea, with the aim to develop it into a physical product at a later stage with the goal for commercialization. Changes in these early stages are simpler to do than later when the idea is already converted into a physical product. In other words, the costs will increase immensely after the initial stage. After the initial stage, a business analysis will be carried out in which the various specifications for the product will be determined. After that the actual product will be developed. Afterwards, most of the time the company will test the new product on a test market in order to see if the product will be accepted and to spot any flaws before spending high production and marketing costs. After this stage, the product will be launched and the data of the commercialization and sales will be monitored and evaluated in order to see if the new product meets the company's KPIs.

Figure 5: Commonly presented linear NPD model

Source: Trott (2005).

As a reference for this research study the more summarized NPD process will be used, which consists of the front and the back end. The front end includes idea generation and concept development and the back end consists of product design and prototyping/testing.

Types of Innovation

There are different kinds of innovations, such as incremental and radical innovations. While incremental innovations feature the improvement of already existing products, as well as upgrades and line extension, radical innovations "refers to radically new products that involve dramatic leaps in terms of customer familiarity and use" (Veryzer, 1998, p. 305). Incremental innovations keep the product line up-to-date and competitive, and tend to be targeted on already existing customers, while radical innovations tend to provide products, which are not yet demanded by customers and therefore open up new markets (Trott, 2005). Radical innovations

are riskier, because they are new to the market and the company, but may yield and secure long-term future and success for the company. Nonetheless, just 10% of all new products are considered to be truly innovative (Trott, 2005); companies use more incremental innovation. Van Hippel, Thomke and Sonnack (1999) give two reasons for this phenomenon. First, companies are too much focused on the short-term. They want to drive immediate sales to satisfy stakeholders, have a return on investment and they also want to provide products to their customers they can be certain to be accepted by them because they do not differ that much from the current product line so that customers do not need to first learn how to use the new product or change their pattern. Second, companies simply do not know how to innovate breakthrough products.

3.3 Co-creation

Structure

Bhalla (2010) proposed a structure of co-creation including, objectives, arenas, collaborators, tools and processes, and contracts. When a company decides to engage in co-creation they have the objective to create value for their customers. The co-creation goals are: Generation (ideas), refinement (refine one or more feature), creation (new products). The next step is to decide, which arenas to use in order to effectively engage with customers. Companies can engage with customers digitally through for example customer communities and websites, but also through social media. People do not use social media just for keeping in touch with their friends and sharing information, but also for interacting and engaging with companies and brands (Bhalla, 2010). In order for co-creation to be effective, customers need to be free and with the least possible restrictions in the so-called arenas, in order to fully exploit consumer's knowledge and capabilities. Therefore a platform is needed that provides freedom to customers so that they can exploit their creativity and use their knowledge, but it is also necessary that these activities are guided to a certain degree in order to channel them to what the company needs (Zwick, Bonsu, Darmody, 2008). The next step is to decide, which customers to select for the co-creation initiatives. Possible approaches are, for example, to select customers, who have a strong passion for the brand or to select according to demographics. In order to transform the collaborators ideas into value, the company needs to establish tools and processes to capture their creativity. Contract means, that companies should be aware of the motives customers have to participate.

Marketers needs to focus on how to select the right customers for the co-creation initiatives and on how to ensure their willingness to voluntary contribute and to spend time and effort, in order to be valuable to the company.

Figure 6: Structure of co-creation

Source: Bhalla (2010).

Benefits of co-creation

Co-creation can have several benefits for the company. Because customers share their truly needs and wants with the company, the company can develop and customize the products accordingly, which increases the likelihood of the new product's success. Furthermore, it can improve product quality due to fewer errors, reduce risks associated with launching new products, and it can increase market acceptance, because the new products reflect customer's wants and needs (Hoyer, Chandy, Dorotic, Krafft, Singh, 2010).

Customers have shifted away from wanting to play a passive role in the company's innovation activities, to the wish for being actively involved. (Hoyer et al. 2010; Sawhey et al, 2005). The two-way communication between the company and the customer helps the firm to better understand customer's needs and preferences and moreover they are able to learn from them.

Furthermore, the company builds a closer relationship with their customers (Ciccantelli, Magidson, 1993).

Online customer co-creation initiatives

There are a lot of possibilities for companies to engage in customer co-creation. Especially virtual platforms facilitate co-creation (Constantinides et al., 2015) due to its speed and they are providing an easy touch point between the customers and the company. Furthermore they are not location dependent, which means customers can take part even if they live far away from the location of the company. This trend is evident, because companies are using social media applications for co-creation more and more (Constantinides et al., 2015). Especially online idea and design contests are often used in co-creation (Hutter et al., 2011). Pillar et al. (2010) proposed eight ideal types of co-creation with customers, within the following three dimensions: the stage in the innovation process, the degree of collaboration and the degrees of freedom. The stage in the innovation process describes the time the customer's input enters the NPD process, the innovation process describes the structure of the relationship: i.e. whether just one customer is involved or a network of customers collaborating; and the degrees of freedom describes if the task at hand is narrowly defined and therefore offers just a few degrees of freedom or if it is an open task which calls for many degrees of freedom.

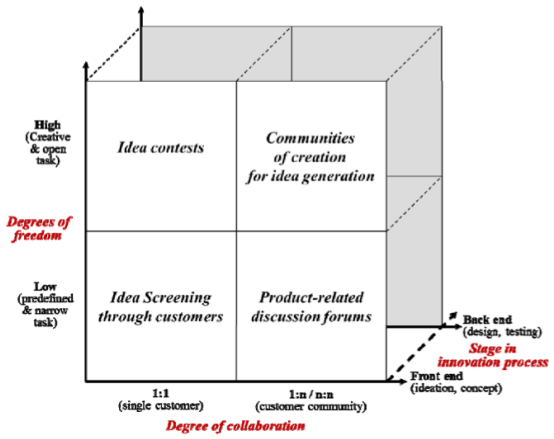


Figure 7: Typology of customer innovation at the front end of the innovation process

Source: Piller et al. (2010).

Idea contests are carried out in a dyadic interaction between the company and the individual customer. The objective of the company using idea contests in the early stages of the NPD is to gather solutions to a given problem or task in a given timeframe. In order to motivate customers to contribute their solutions, the company will give away prices or awards. This motivation through extrinsic rewards is also important, because the customer is unlikely to benefit from the product he or she has helped to develop in the short term.

Idea screening through customers might be the step the company takes after an idea contest, which resulted in getting several hundred ideas from customers. In this step, customers can select these ideas, which they think have the highest potential for them and which serve their needs and wants best. Often this step of evaluating and ranking ideas is carried out by experts of the company, however customers also can take over this task. Nevertheless, the company should think about certain boundaries. For example, if a company received several hundred ideas, the customer should not be asked or have the possibility to evaluate them all. This will lower the quality of the decisions made.

Example: Haribo's idea screening

Haribo recently let their fans on Facebook and on a special website decide, which six new flavored gold bears will be produced and sold for a short time in stores. In particular the blue blueberry flavored gold bear was very popular. The reason for this might be, that since decades fans requested a blue gold bear already.

Image 1: Haribo's crowdsourcing activity
Source: https://goldbaeren-fan-edition.de (2014).

Another co-creation initiative at the early stage of the NPD process involving *networks of customers* for idea generation. These most often take the form of virtual communities, in which members collaborate with other community members to a great extent. Most of the time, the members of a community share certain characteristics, such as interest of knowledge regarding a certain brand or product. In these online communities, they share their opinions and experiences with each other. Companies can gain input for innovation, incremental, as well as radical, through these communities. There are two types of communities: product related discussion forums and communities of creation. The output of the product related discussion forums rather are incremental innovations, while the later rather is aiming at generating radical innovation ideas.

These mentioned alternatives are possible alternatives for companies to use early in the NPD process. Pillar et al. (2010), also has suggestions for the later stages, namely design and testing. In order for these initiatives to be valuable for the company, the customer's input needs to be more specific and advanced, compared to the earlier stage. Furthermore, there is a need for more structure and guidelines.

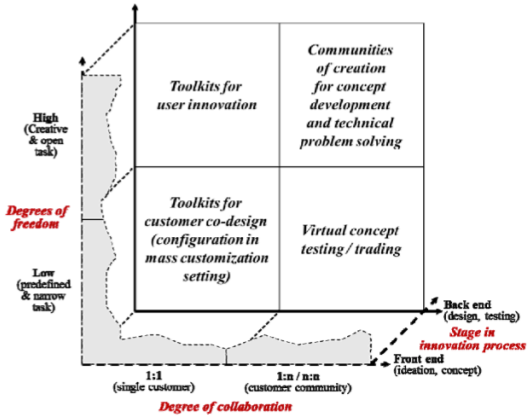


Figure 8: Typology of customer innovation at the back end of the innovation process

Source: Piller et al. (2010).

One initiative is to establish *toolkits for user innovation*, with which customers can solve a problem according to their needs and wants on a given interaction platform. Through these toolkits, customers undergo the trial and error cycle until they find a new solution. Another

similar initiative are *toolkits for customer co-design*. Rather than establishing something new, this initiative aims at generating product customization and variations.

Example: Coppenrath & Wiese's toolkit

Coppenrath & Wiese recently provided a toolkit for customer innovation. They encouraged their Facebook fans to create their own dessert, which will be sold in stores starting in May 2015. For this co-creation activity, the company developed an online configuration for Facebook and for a special website (www.fan-desert.de), where fans were able to choose and mix 58 different ingredients. More than 3.400 desserts were configured of which 20 were selected by Facebook fans and website users. A jury of experts will select the winning dessert, which will be added to their portfolio and sold in stores starting in May 2015.

Image 2 & 3: Coppenrath's co-creation activity on facebook

Source: https://www.facebook.com/coppenrath.wiese (2014).

Example: McDonalds burger creation toolkit

McDonalds has a co-creation initiative called "Mein Burger", which they have every year. Customers can create their own burger online and also name it. The five burgers with the most votes will be sold nationwide at all McDonalds- restaurants. Furthermore, a TV-commercial will be created, starring the burger as well as the customers who created them.

Image 4: McDonalds co-creation activity

Source: https://www.mcdonalds.de/produkte/meinburgeroffline (2014).

Other co-creation initiatives at the back end within a network environment are *communities of co-creation for problem solving* and *virtual concept testing/trading*. These initiatives can be labeled as crowdsourcing, where a high number of people are "working on the collective production and further development of knowledge and information products" (Pillar et al., 2010, p.n18) in virtual projects.

Impediments of co-creation

Co-creation, as well as NPD, are management processes in the context of the company, which arise tension between efficiency and creativity. For companies to be efficient, it is mostly necessary to have strict guidelines and stable routines. The environment is usually stable and

controlled. A high level of efficiency is necessary for the company to be competitive on the market. However, in order to have creativity gains, it is necessary to provide freedom and room to try out new ideas. The environment needed for this is open and flexible (Trott, 2005). Therefore companies need to find a balance between increasing efficiency, but also making slack for creativity. Furthermore, co-creation can be seen as a threat, which can weaken and undermine the control of the company. However, in order for the participation in the co-creation initiatives to be successful, the company needs to grant access to enough information (Wijnhoven, Ehrenhard, Kuhn, 2015). Other possible impediments could be for example secrecy concerns, sharing of intellectual property, information overload and product infeasibility (Hoyer et al., 2010). Companies might be hindered, because producing what the customers want, may not be feasible or profitable (Trott, 2005).

Organizational requirements

The question is if the management is willing to accept ideas from outsiders or if they believe that their expert ideas are better. A study by Menon and Pfeffer (2003) found out, that managers value the knowledge from external sources. However, a shift in management's mindset is required, when thinking about using co-creation initiatives. The company's management needs to be committed to co-creation and needs to invest resources, such as money and people. Next to the supporting management actions, the organization needs to have a supporting organisational structure and a collaboration mindset (Martinez, Lanzaarotti, Manzini, Sanchez Garcia, 2014). Bhalla (2010) names three prerequisites for a new mindset, namely authenticity, flexibility and conviction. Authenticity is "part ethics, part transparency and part trust" (Bhalla, 2010, p. 25). Flexibility means that the company should be open to a great variety of different and opposing points of views from customers. Companies might not agree with the view of the customers, but they should demonstrate that they value and listen to their opinion and also reconsider their point of view. Conviction means that the company should not miss to follow-through.

3.4 Summary

This chapter has shown that NPD is one of the most important growth strategies for companies. Traditionally, market research is used to reveal what the customers want and this knowledge and the information then is translated into actual products. Most of these new products however are of incremental nature; they are extensions to the current product line.

Customers can contribute to a great extent to the innovation process within the NPD trough co-creation. Companies should build capabilities and infrastructures, which encourage and allow customers to co-create within the product development processes. Especially the food industry has a high degree of innovation potential and it is evident that this industry entails a high product failure rate because firms fail to actively listen to their customers. Engaging in co-creation activities could change that.

However, firms need information and guidance on how to assess which of the several possible co-creation initiatives is suited the most for them. There are reasons for not adapting the customer-centric view found in literature, such as secrecy concerns, sharing of intellectual property, information overload, product infeasibility, loosing to much control and the need to find a balance between increasing efficiency but also making slack for creativity. A further step is to check whether these are apparent on the German market place and to find out which strategy companies can use with taking their impediments into account.

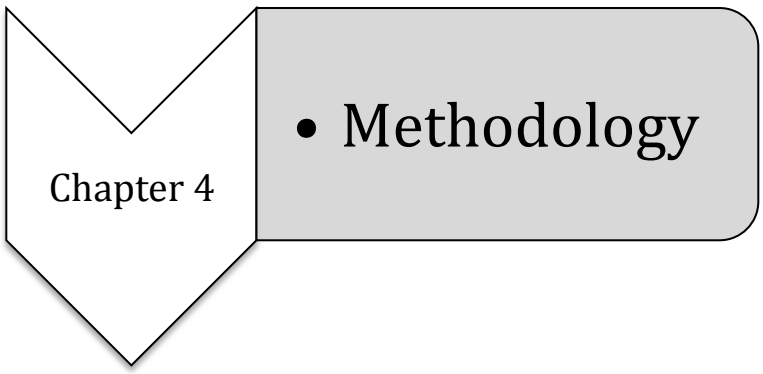
Main drivers found in literature	Increase in product's success
	Market acceptance
	Improvement of product quality
	Reduction of risk
	Two way communication
Main impediments found in literature	Secrecy concerns
	Sharing of intellectual property
	Information overload
	Product infeasibility
	Unprofitability
	Loss of control

Table 4: Main drivers and impediments found in literature

Source: Own elaboration.

PART III RESEARCH DESIGN

This part deals with the methodology. It provides information about the type of study and the research design. Furthermore it explains how the cases have been selected and what questions were asked in order to get data for the analysis. The data analysis method is illustrated and information about reliability and validity is given.



4. Methodology

4.1 Introduction

This chapter deals with the methodology used to gather information for answering the research problem regarding company's drivers and impediments of engaging in consumer co-creation initiatives for their NPD. This chapter will give more details about the type of study, the selection process, the interview protocol, the data collection and analysis, as well as information about reliability and validity.

4.2 Type of study

For the empirical part, an exploratory qualitative study of the German food industry is carried out, because the subject of the study has not been extensively researched yet and it is aiming at getting new insights into the topic. Exploratory studies have three purposes: "(1) to satisfy the researcher's curiosity and desire for better understanding, (2) to test the feasibility of undertaking a more extensive study, and (3) to develop the methods to be employed in any subsequent study" (Babbie, 2010, p.92), which are the cases with this co-creation research. The case study research approach is used to derive patterns in engaging in and avoiding co-creation. The grounded theory will be used and the units of analysis are companies located in Germany and operating in the food industry. As in traditional qualitative approached, it is relied on a rather small number of companies to develop the insights. In order to gather relevant and useful data and to identify emerging themes in co-creation, semi-structured interviews with experts in the food industry are conducted. The outcomes of each case will be compared and an explanation will emerge, which will be used to characterize the drivers and impediments of consumer co-creation implementation.

4.3 Research design

The case study research method is used, because it is suitable for novel research areas, which have not been researched before (Eisenhardt, 1989). It attempts to examine (a) a contemporary phenomenon in its real-life context, especially when (b) the boundaries between phenomenon and context are not clearly evident" (Yin, 1981, p. 59). According to Eisenhardt, a case study is

“a research strategy which focuses on understanding the dynamics present within single setting”. A case study can consist of just one case, as well as of multiple cases. Furthermore, this type of research includes multiple data collection methods, such as observations, interviews, questionnaires and archival records and the output of these therefore can be either quantitative or qualitative (Eisenhardt, 1989). It is important that the case study research is conducted systematically. In the article “Building theories from case study research”, Eisenhardt describes the steps, which need to be taken to design a good case study and the guidelines, which are important for this research will be presented below.

Getting started: It is highly important to have a research question in mind, when starting with designing the case study research. The reason for this is that it will focus the efforts to what is really important. If possible it is good to have a priori constructs, because this provides better grounding of construct measures.

Before the actual designing of the case study research started, the research problem, as well as a tentative construct was developed. Furthermore, the theoretical framework was established, so that constructs from literature were known, these in turn were used to design the interview protocol. The following table shows the motivation for the individual topics of the interview by linking the questions, with the constructs found in literature.

General information	Motivation
General information about the expert being interviewed: - Since when do you work for the company? - In what department do you work and what is your position within the company? - How is your department integrated in the company? - How many employees does your department have? - What are your main functions?	
General information about the company: - What products are in your product portfolio?	
New product development	**Motivation**
Information about new products: (1) How often do you develop and launch new products? (2) What is the proportion of incremental and radical product innovations? (3) How many of them are successful? How many new products fail? (4) Do you feel the pressure to be innovative and launch new products for example due to competitors?	(2) Just 10% of all new products are considered to be truly innovative (Trott, 2005); companies use more incremental innovation. (3) There is a high rate of product failure in the food industry (Costa & Jongen, 2006; Menrad, 2004; Martinez, Briz, 2000). (4) NPD is "widely regarded as an essential element of competition between food companies" (Grunert, Harmsen, Meulenberg, Kuiper, Ottowitz, Declerck, Traill, Göransson, 1997, p.1). Innovations, such as new products, processes or services, are highly important in order to stay competitive (Menrad, 2004; Trott, 2005).
Information about the process: (1) Who and which departments are involved in the NPD process? (2) How long does it takes until a new product is launched? (3) What are the processes in your NPD? Please name and describe each individual step. (4) Do you integrate your customers in your NPD? If yes, how and to what degree? If no, why not? (5) What are the strengths and weaknesses in your NPD process?	(1) A major source of innovation activities are the internal R&D departments of industrial companies (Menrad, 2004). However, SME, which have a high relevance in Germany, do not engage that often in R&D when compared with larger companies and often do not even have R&D departments. Menrad (2004) mentions in his research, that SMEs involve customers too less in their innovation activities. (2) Benefits of NPD include shorter product development (Rosenau, 1988; Van Engelen, Kiewiet, & Terlouw, 2001) (3) Traditional stages: idea generation, concept development, product design and prototyping/testing
Information about the process: (1) Who and which departments are involved in the NPD process? (2) How long does it takes until a new product is launched? (3) What are the processes in your NPD? Please name and	(1) A major source of innovation activities are the internal R&D departments of industrial companies (Menrad, 2004). However, SME, which have a high relevance in Germany, do not engage that often in R&D when compared with larger companies and often do not even have R&D departments. Menrad (2004) mentions in his research, that SMEs

Co-Creation	Motivation
Information about the usage of customer co-creation: (1) What do you think about customer co-creation? (2) Do you actively ask customers for feedback/ideas? Did you engage in customer co-creation initiatives before? (3) Do you have the feeling that customers want to be an active part of NPD? (4) Do you think customers can contribute to the NPD in a successful way? Questions for companies, who have already engaged in co-creation: (5) How do you do it? (6) Please describe your Co-creation initiatives. (7) Which type of customers participated? (8) What are the strengths and befits of co-creation? (9) What is the added value customers have? (10) Have you had bad experiences with co-creation? Please explain. Questions for companies, who have not engaged in co-creation: (11) What hinders you to engage in customer co-creation within your NPD? (12) Do you have plans to do it in the future?	(3) Customers have shifted away from wanting to play a passive role in the company's innovation activities, to the wish for being actively involved. (Hoyer et al. 2010; Sawhey et al, 2005). (4) Engaging customer through co-creation can improve product quality due to fewer errors, reduce risks associated with launching new products, and it can increase market acceptance, because the new products reflect customer's wants and needs (Hoyer, Chandy, Dorotic, Krafft, Singh, 2010). (5) There are several ways, such as idea contests, establishing toolkits for user innovation, communities of co-creation for problem solving and virtual concept testing/trading (Pillar, 2010). (11) Possible impediments are for example secrecy concerns, sharing of intellectual property, information overload and product infeasibility (Hoyer et al., 2010). Companies might be hindered, because producing what the customers want, may not be feasible or profitable (Trott, 2005).

Table 5: Motivation for questions from literature

Source: developed for this research.

Selecting cases: This is a highly important and crucial step, because the population defines certain characteristics from which a sample needs to be taken in order to represent the population as close as possible. Eisenhardt mentions that in case studies, random selection is not necessary and also not preferable. Theoretical sampling should be used instead, which means that cases may be chosen according to categories, differences or to match previous cases.

For this research, diverse companies from a population of German food companies are purposefully selected. Five companies from different sub-sectors were chosen. Although it is not random sampling, theoretical sampling makes sure that the selection of the specific cases extends the theory to a wide range of German food companies.

Crafting Instruments and Protocols: In this type of research design, it is useful to collect data through multiple methods, such as for example observations, interviews, questionnaires and achieves. These multiple data collection methods strengthen the grounding theory by triangulation of evidence. Furthermore, it is possible to combine qualitative and quantitative data in this research design, which may provide the results more strength because it can provide synergy. In other words, Mintzberg (1979) explains it as follows: “We uncover all kinds of relationships in our "hard" data, but it is only through the use of this "soft" data that we are able to "explain" them, and explanation is, or course, the purpose of research” (p. 587). Eisenhardt (1989) also mentions that multiple investigators are also of value for such a study, because they may raise the creativity of the study through different insights and points of views, and because the investigations of multiple parties may enhance confidence of the findings. For example when the investigations are similar, they will add to the empirical grounding of the hypotheses, while dissimilar investigations leave room for further research.

For this research, several data collection methods are used. Before interviewing the companies, a throughout examination of their website, social media sites and magazine reviews is conducted, which will be further explained in 4.6.

Analyzing Within-Case Data: Analyzing data from case studies can be quite difficult, because of the high volume of data the researcher gathered. There are different methods how to cope with this volume, but Eisenhardt suggests to have detailed case study write-ups for each case. The basic point is that the researcher becomes familiar with the case by itself, without generalizing or comparing to other cases already.

Searching for cross-case patterns: In this step it is important to look at the collected data in different ways in order not to reach premature or even false conclusions. Eisenhardt mentions different ways to do this. One way is to select categories or dimensions, which are for example mentioned in the existing literature or chosen by the researcher, and look for within-group similarities and intergroup differences. Another way is to pair cases and to find out the similarities and differences between each pair. A third way is to divide the collected data by data source. The intention of all these ways is that the researcher looks deeper into the cases and tries to find patterns amongst them.

Enfolding Literature: When the data is analyzed and new concepts, theories or hypotheses have been developed, it is important to compare it with the existing literature in order to find out the similarities, as well as the contradictions. To have a profound literature base for this comparison, it is important to have a broad range of literature. Matching emergent theory with existing literature can enhance internal validity, generalizability and theoretical level of theory building from case study research.

4.4 Selection process

The interviews are conducted with experts of various German food companies, the brand or product manager, because these positions oversee the brand/the product and are close to the customers. Over 50 companies from different sub-sectors mentioned in chapter 2, as well as from the fast food sector, were contacted and asked to participate in this study, of which five agreed to contribute to this research.

Case	Company	Interviewee	Job Position	Date	Length
1	**No public information**	**No public information**	Channel Marketing Director	14-01-2015	14:00 min
2	**No public information**	**No public information**	National Sales & Marketing Manager	06-11-2014	21:10 min
3	**No public information**	**No public information**	Product Management and Purchasing Director	23-02-2015	32:00 min
4	**No public information**	**No public information**	Marketing Director	20-05-2015	32:00 min
5	**No public information**	**No public information**	Product manager in Marketing	20-05-2015	31:00 min

Table 6: Conducted interviews

Source: developed for this research.

As mentioned in the research design, the selected companies have heterogenic characteristics and it was aimed for having interview partners from a variety of sectors of the food industry:

Case	Size	Sector	Business lifecycle on German market	Experience with co-creation
1	Small to Medium	Beverages	Established	Yes
2	Small	Fast Food	Start-up	No
3	Big	Frozen Food	Mature	Yes
4	Medium	Fast Food	Growth	No
5	Medium	Dairy products	Growth	No

Table 7: Characteristics of the companies

Source: developed for this research.

The actual interviewees are selected on the basis of the key informant approach, which is composed of the following five criteria of eligibility: role in community, knowledge, willingness, communicability and impartiality (Marshall, 1996) in order to retrieve the knowledge from an ideal expert. It is possible to gain deeper insights through key informants, which is significantly important, because it makes the study more valuable. The criteria "role in the community" is rather easily to determine in advance, while it is more difficult with the four remaining ones. For this reason, a brief background of the study and the topic was given at an early stage of communication with the companies and it was explicitly mentioned that the selected interview partner needs to have sufficient knowledge about all marketing relevant topics, and especially about the NPD process of the company. Furthermore, it was asked from the company in case of participation, that the interviewee should be willing to communicate and to co-operate as much as possible.

4.5 Interview protocol

Since this method is more about defining a set of topics, which need to be discussed, rather than a set of standardized, fixed questions, an interview protocol has been developed in order to give the interviews some degree of structure and to make them more comparable afterwards. Since case studies often are not based on detailed conceptual frameworks, it is still important to distinguish substantial propositions or questions before the interviews, but still leave room for flexibility for modifying the topics and questions in the course of the interview (Yin, 1981). The interview protocol gives the interviewer the flexibility to adapt questions and to go into detail with certain points of interest. Since the interviews are aimed at getting new insights and explore, most questions are open questions.

There are two versions of the interview protocol, which only differ in the last part, which deals with co-creation. One version was created for customers who make use of co-creation initiatives, the other for companies, who have never engaged in co-creation so far (see Appendix B).

All interviews have the same general structure starting with an introduction of the interviewee. After that he/she is asked to provide some more information about the company, as well as their

products. The next step, after inquiring information about their products is to gather information about their new product development process. It will be especially inquired if customers are involved in the NPD. The next part deals with customer co-creation. As mentioned, there are two versions of the interview protocol; one is for companies, who already engaged in co-creation and the other one for companies, who never used co-creation before. This section is aiming at finding out their individual drivers and impediments of co-creation.

4.6 Data collection

During the first phase of the research, each company is studied extensively through for example their company website, their social media sites and articles in magazines. Special attention is for example paid for information about their NPD process, as well as their innovativeness. Are they engaging in radical or incremental innovations? How do they innovate? Furthermore, it is researched if the companies have engaged in customer co-creation before. Because experience shows, that some companies are not aware that they have engaged in customer co-creation before, because they are unaware of this phenomenon. By knowing if they have engaged in virtual co-creation before, the interviewer can ask more specific questions about their experiences with it.

The next phase of data collection are the interviews with the companies, which are guided through the interview protocols, which focus on specialized topics, but which also give room for flexibility in asking additional questions or to dig deeper in the topic. All interviews were recorded and notes were taken during the interviews if special thoughts or ideas arose. Two interviews were conducted at the company's office and three were conducted over the telephone for practical reasons.

4.7 Data analysis

The next step after data collection through multiple methods, which results in a huge amount of textual data, is the data analysis. The interviews are recorded and afterwards transliterated for the actual analysis. In order to translate the information from the interviews into useful and correct data, the coding-method is used, which is a suitable method for this kind of research where the

textual data needs to be presented in such a way that it is possible to identify relationships, patterns and differences (Basit, 2003). The coding method allows to connect certain facts of the phenomenon and to generate theory from that data (Basit, 2003).

In the process of coding, the researcher is "classifying or categorizing individual pieces of data" (Babbie, 2010, p. 400). There are three processes of coding, namely open, axial and selective coding. Open coding is the initial step during which the researcher suggests the codes by reading and rereading a part of the textual data and then identifying the key concepts of that passage (Babbie, 2010). These key concepts will be used for axial coding, which aims to identify the core concepts of the research, through a reanalysis of the results of open coding. Selective coding aims at identifying the central code in the research, to which the other codes are related to (Babbie, 2010). To ensure a correct coding process, a coding guideline with explanations has been developed. Please find the guidelines in Appendix C.

During the coding process, attention needs to be paid that the categories are neither to small nor too numerous (Yin, 1981). Therefore, the category names are mostly taken from the concepts and frameworks discussed in the theoretical framework section of this research. The coding process brings the collected information from the expert interviews in a suitable form in order to analyze and interpret them for the purpose of reaching a conclusion to the research question. The data analysis is finished when no new concepts emerge. Not all subjects mentioned by the participants can be included in this report, only the core patterns.

4.8 Reliability and validity

Measures are taken to ensure the highest degree of reliability and validity. Reliability means that "a particular technique, applied repeatedly to the same object, yields the same result each time" (Babbie, 2010, p. 150), while validity refers to "the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration" (Babbie, 2010, p. 153).

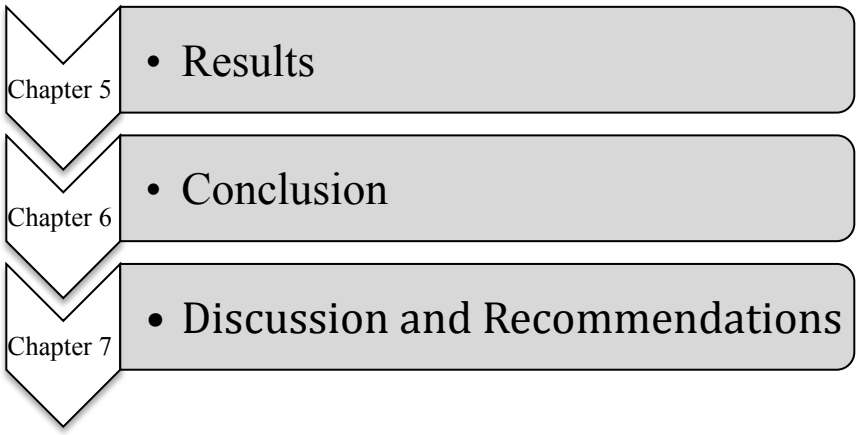
Since semi-structured interviews are conducted for this research, which is resulting in a lower reliability than in standardized interviews, measures are taken to have reliable and valid data. A consultant of a market research institute reviewed the interview protocol in order to make sure, that the questions are clear to the interviewee in order to get the information, which is needed for

this research. Therefore she provided feedback on the comprehensiveness and phrasing of questions. Special attention was paid that the interviewer takes a neutral and non-dominant role, but still is able to get the needed information from the interviewee for this research. It is important that the interviewer does not influence the interviewee in order to avoid the validity bias. Furthermore, repetition and follow-up questions was asked in order to clarify certain information during the interview.

Additionally the coding of the interviews was conducted by two coders independently in order to increase the reliability of the research. The increase in reliability can be seen by the fact, that it has a sufficient inter-rater reliability with a calculated Cohen's Kappa of 0.76.

PART IV EMPIRICAL FINDINGS & CONLUSION

This part deals with the results and the conclusion which can be drawn in regards to the research question. Chapter 5 analyses the cases and chapter 6 of this thesis provides the conclusions, which can be drawn by the research. The last chapter gives implications for companies operating in the German food industry and provides recommendation for future research.



5. Results

This chapter discusses the results, which have been derived from the case studies. First an in-case analysis of the companies being studied is conducted, followed by a cross-case analysis. This cross-case analysis will give more information about similarities among the cases, as derive patterns on mindset, structure of co-creation, drivers and impediments.

5.1 In-case analysis: Companies being studied

No public information

5.2 Cross-case analysis

Table 7 gives an overview about the cross-case analysis divided into six categories of analysis, namely NPD, pre-requisites, company mindset, structure of co-creation, the drivers, as well as impediments of co-creation.

	Co-Creation experience		No Co-creation experience		
	Case 3	**Case 1**	**Case 2**	**Case 5**	**Case 4**
NPD					
New Products	200 new products	2 to 4 each year	around 20 new products per year	around 2 per year	12 products each year
Mixture of incremental and radical	most of new products are incremental	most of new products are incremental	most of new products are incremental	most of new products are incremental	just incremental innovations
Success rate	80% of new products are successful	1/2 are highly successful	2/3 are successful	almost all are successful	70-80% are successful
Process	marketing and quality assurance are part of NPD	own NPD Team	managing director decides	interdisciplinary NPD team	own NPD team
	no defined NPD process	defined NPD process	no defined NPD process	defined NPD process	defined NPD process
Customers part in it	survey once a year/ feedback data gathered	consumers are involved through focus groups	customers are not really a part of it, but when it is rather a traditional way of gathering ideas in infrequent small focus groups	not part of NPD	consumer research
Pre-requisites for consumer co-creation					
feel need to be innovative	no	no	no	some	yes
consumer centric?	yes	yes	no	no	yes

believe consumers want to take an active part	yes	yes	yes	yes	yes
believe consumers can co-create value	yes	yes	yes	yes	heavy users are viewed as having more expertise as the marketing department regarding new product
Company mindset					
Authencity	yes	yes	yes	yes	yes
Flexibility	yes	yes	no	no	yes
Conviction	they follow-through after a co-creation initiative	they follow-through after a co-creation initiative	if they decide to engage in co-creation initiatives they want to make sure to follow-through	if they decide to engage in co-creation initiatives they want to make sure to follow-through	if they decide to engage in co-creation initiatives they want to make sure to follow-through
Structure of co-creation					
Objectives	idea generation	idea generation			
Arenas	website, social media tool	social media tool			
Collaborators	open to whoever wants to participate	open to whoever wants to participate			

Tools & Processes	toolkit	toolkit			
Contracts	stimulate engagement by producing the winner product and giving away a price to the winner	stimulate engagement by producing the winner design			
Drivers					
Generating ideas	yes	yes	yes	yes	yes
Market acceptance	yes	not noticed	yes	-	yes
Improve quality	-	-	-	-	-
Reduce risk associated with launch	-	-	-	-	-
Other motives	it is a lot of fun / PR				improve company - consumer relationship
Impediments					
Secrecy concerns	-	-	-	yes	-
Sharing of intellectual property	-	-	-	yes	-
Information overload	yes	yes	yes	-	-
Product infeasibility	yes	yes	-	-	yes

Loss of control	-	yes	-	yes	yes
Unprofitability	no		-	-	
Other impediments	takes up a lot of resources such as manpower	-	status quo of NPD too unstructured	too complex / no expertise yet / overwhelmed with the process / finding balance between guidelines and creativity	takes up a lot of resources such as manpower
			does not fit their company life stage / priority to establish brand first	does not fit their company life stage / priority to establish brand first	does not fit their company life stage / other priorities
			Too complicated because still too dependent on the parent company in the UK.	no experience with consumer relationships	which consumers to involve
			Too complicated process		too complex to integrate in their NPD process
			too timely products need to be introduced short term		change of mindset of employees required

Table 8: Cross-case analysis
Source: own elaboration.

5.2.1 Common characteristics

The results of the expert interviews with leading German food industry companies show a number of facts, trends and developments, which are homogeneous across different sub-sectors of the food industry.

Similarities are that all companies develop and introduce new products each year and that most of the product innovations are of incremental nature. This is because they are too focused on the short-term and want to drive immediate sales to satisfy stakeholders. Furthermore, as research showed, they simply do not know how to innovate breakthrough products.

Another similarity, that all companies are sharing is their attitude towards consumers. They believe that consumers want to take an active part, as well as they are a great source of new ideas. Consumers can be co-producers of value and management is willing to accept ideas from consumers.

> "*We can only be successful, when our customers like us and customers [...] want to have a saying in product development. They want to know that they are being heard, that they are important and that they have a saying.*" (see interview case 2)

This notion is also apparent for companies who have experience with actively integrating consumers.

> "*[Consumer] are open. They are affine for such things and they seem to like it and are having fun.*" (see interview case 3).

Another trend most companies have in common is that they have no urge to be innovative. Although literature states that food industries are operating in a stable and competitive environment and therefore need to differentiate themselves through new products (Menrad, 2004), most of the companies do not feel the pressure to be innovative.

"*The beer business is not driven by innovation."* (see interview case 1)

"*Actually we do not have the pressure. We design our economy and market by ourselves. [...] We are no leaders in innovation. And we never will be." (see interview case 3)*

Even a company operating in a highly competitive environment does not see the need to be innovative in order to stay competitive.

" *[Our competitors] are really, really, really innovative in new product development. However, we do not have the feeling that we need to follow this trend or to just develop new products, because they are doing it. [...] we keep it rather small and simple and we do not feel pressure at all to do what they are doing.*" (see interview case 2)

Just one company mentions that they feel the pressure to be innovative, which is coming from their competitors. Their main competitors have increased their innovativeness recently, which increases the pressure to be more innovative for them as well.

5.2.2 Company mindset

Nowadays having a close relationship with the consumers is significant, because consumers have a variety of choices. Due to the emergence of the Internet, consumers are empowered and have the possibility to interact with companies, as well as spread their opinions virally. As a result of this, consumers do not wait to end a relationship with the company, when the company does not fulfill their needs anymore. Companies nowadays need to be consumer and customer centric, which means that the consumer/customer should be the middle of their business operations. Most companies interviewed value input coming from consumers and therefore are trying to involve them in business operations as much as possible.

"The great thing about our product development process is, that we include consumers multiple times during the process […]. We have at least two tests with consumers." (see interview case 1)

Despite this importance, not all companies interviewed are consumer-centric. One company answered, when asked if they include consumer input when they are brainstorming about new products, that they are not really doing it. Sometimes they have small scale product tastings in order to get feedback on a new product option. However, most of the decision power stays with the managing director, which

> *"decides what we are doing and he just took product ideas from other countries."* (see interview case 2)

However, in the course of this interview it was mentioned, that

> *"...we want to give our customers what they want. But first we need to know what they want. Managers are good at claiming what the customers want. Especially our managers."* (see interview case 2)

This shows that marketing has realized the importance of engaging consumers and customers, but if the upper management has a wrong mindset, the company cannot be consumer-centric.

Concerning the company mindset, most of the cases have the characteristics, which are needed. All companies show authencity; in other words they are viewed as ethical, transparent and trustworthy, which can be determined by looking at the information they disclose for example on their website and social media sites. Furthermore, all companies have the characteristic of conviction, which means that the company follows or sees it as their goal to follow-through on their co-creation initiative. However, two of the five companies are missing the characteristic of being flexible with regards to accepting a variety of different and opposing points of views from consumers.

5.2.3 Co-creation and its structure

The structure of the co-creation initiatives has been analyzed according to the model of Bhalla (2010), which consists of the following parts: objectives, arenas, collaborators, tools and processes, as well as contracts. In general it can be said that the co-creation initiatives from the

interviewed cases have a structure of simple nature. Companies are not experienced yet and therefore shy away from more complicated structures of co-creation.

The main objectives of both companies, who have already engaged in consumer co-creation, is the generation of new ideas for products. Arenas used for the co-creation initiatives done by the companies are website, as well as social media. They did not select consumers for their initiatives; they opened up the process to everyone. With the help of toolkits, the co-design contests were realized, which are often used in co-creation (Hutter et al., 2011). Rather than establishing a breakthrough innovation, these contests aim at generating product customization and variations.

The companies have recognized that extrinsic rewards motivate the participants to contribute and their ideas or designs. This is because the participant is unlikely to benefit from the product her or she has helped to develop in the short term.

5.2.4 Drivers of co-creation

Literature mentions certain benefits for companies, which serve as drivers for engaging in co-creation, namely it can improve product quality due to fewer errors, reduce risks associated with launching new products, and it can increase market acceptance, because the new products reflect customer's wants and needs (Hoyer, Chandy, Dorotic, Krafft, Singh, 2010).

The driver that it reduces risks associated with the launch was not mentioned at all by any company. The same applies to the driver that it improves product quality. The reason for this is that the German food industry has strict safety and quality assurance regulations. Therefore, consumers cannot improve the quality, since it is already on a high level.

The main drivers to engage in co-creation in the German food industry are getting more ideas, as well as an increase of market acceptance potential. One experienced company mentioned, that through co-creation

> *"products emerge, which are beneficial for the company, and which have a chance on the market."* (see interview case 3)

Consumers can share their truly needs and wants with the company and thus the new products represent these characteristics.

This company also mentioned that they received about 10.000 ideas in their last online consumer co-creation initiative, and also they mentioned that they initially just wanted to produce the winner product, but they are highly positive about five more ideas, which they want to produce in the following years as well.

One company even goes that far, that they believe that their so-called heavy users, consumers who come to their fast food restaurants at least once a week, have more expertise concerning their product portfolio than their own marketing department.

> *"They know the whole product range and some of them are better versed in the product range, as well as in terms of taste, as many of us from the marketing department."* (see interview case 4)

Furthermore it was mentioned that co-creation can be a public relations (PR) tool. The posts on Facebook informing the consumers about co-creation shows a lot of likes, shares and comments. This means that these posts have a high engagement rate, leading to a wide organic reach. Furthermore, the company seeded newspapers with press releases about this project.

One company also mentioned, that since consumer want to take an active part, consumer co-creation projects can improve the company-consumer relationship, because

> *"It might happen that the contact with the customer will be torn apart to a certain degree when you do not involve him."* (see interview case 4)

5.2.5 Impediments of co-creation

Possible impediments mentioned by literature are for example secrecy concerns, sharing of intellectual property, information overload, product infeasibility (Hoyer et al., 2010), as well as loss of control and unprofitability (Trott, 2005). All these are mentioned by the companies as well, but the spread of occurrence depends. Information overload, product infeasibility, as well as loss of control were mentioned the most, with a count of three each.

However, companies have already noticed, that narrowing the options you give in consumer co-creation can lower all these three risks. Furthermore, apart from the risk of loosing control, one company also mentioned that there is a risk of loosing the brand essence (see interview case 1). Furthermore, Maisie Antoniello, Senior Brand Manager Global Blended at Starbucks USA, who

has a lot of experience with co-creation and innovation projects in various brands, mentions this risk. If you listen too much to the consumer it can happen, that "you lose some of the essence who you are" (see interview 6). This is because you tweak the product to the consumers needs and it can happen that this is not conform to your brand characteristics.

Additionally, one company mentioned secrecy concerns and sharing of intellectual property as a problem of online co-creation.

> *"There is the problem, that you have to communicate some information openly in some kind of way. And you do not really know who are the individuals, who receive this information. It could be also someone from the competition. […] I cannot estimate how much company interna and secrets we have to reveal in order that it will be a successful new product."* (see interview case 5)

Another impediments mentioned, is that such a project takes up a lot of resources, such as manpower.

> *"Our team is a lot smaller than McDonalds, who probably has a huge team available. It would be benefitting to integrate [online consumer co-creation], but in order to develop it next to daily business, it takes up a huge amount of work."* (see interview case 4)

Co-creation initiatives are seen as an additional project to the marketing department and

> *"the internal resources [manpower] are used more as with a normal product."* (see interview case 3)

Furthermore, it is notable, that the companies who have not engaged in co-creation initiatives so far have mentioned additional impediments. One of the additional impediments mentioned by all non-experienced companies is that it does not fit their life stage. They mentioned that the reason, why they have not used co-creation in their operations yet, is that their main priority at the moment is to establish the brand in the German market first. Furthermore they admitted that integrating co-creation is to complex to integrate in their operations at the moment. The companies mentioned different reasons for this. One company mentioned that they have no experience engaging with consumers:

> *"Our main reason for not using co-creation is that we just have too less experience."* (see interview case 5)

Furthermore the lack of a defined NPD process makes it difficult to integrate co-creation.

One company also mentioned that it is difficult to find the right balance between giving rules and guidelines in order to secure the feasibility of the new product, but also leave enough room for creativity. (see interview case 5)

Furthermore, the mindset of employees of the NPD team can impose impediments for not engaging in a co-creation project. One company says that,

> *"there is basically an internal political issue. The fact that you are involving another element [the consumers] might make marketers and the food innovation team mad. Because generally these two teams have the expertise. If you want to involve more people in it now, it might convey that the company is not happy with the current innovation situation. Therefore this has to be managed internally as well. Both teams have to be shown that [consumer co-creation] has certain benefits without telling them that they are not doing a good job at the moment."* (see interview case 4)

5.2.6 Comparison of theoretical and empirical results

According to literature, there are five main drivers, namely, (1) market acceptance, (2) two way communication, (3) risk reduction, (4) increase in product's success and (5) improvement of quality. The aspect of an increase in (1) market acceptance due to consumer co-creation was mentioned the most. The company experts mention, that through co-creation they can determine consumers truly needs and wants and that the new products therefore represent these characteristics, which in turn shows an effect on market acceptance. One company mentioned the benefit of being able to engage in a (2) two way communication with the consumers and to establish a relationship with them. What is notable is, that all the other main drivers, (3) risk reduction, (4) increase in product's success, as well as (5) improvement of product quality, are not supported by the company professionals.

		Mentions by cases
Main drivers found in literature	Market acceptance	3
	Two way communication	1
	Reduction of risk	-
	Increase in product's success	-
	Improvement of product quality	-
Main impediments found in literature	Information overload	3
	Product infeasibility	3
	Loss of control	3
	Secrecy concerns	1
	Sharing of intellectual property	1
	Unprofitability	-

Table 9: Comparison theoretical and empirical results

Source: Own elaboration.

Literature mentions six main impediments, hindering companies to engage in consumer co-creation, which are (1) information overload, (2) product infeasibility, (3) loss of control, (4) secrecy concerns, (5) sharing of intellectual property and (6) unprofitability. Most of these are supported by company experts, except (6) unprofitability, which was not mentioned at all during the interviews. (1) Information overload, (2) product infeasibility and (3) loss of control were mentioned the most. However, companies have already noticed, that narrowing the options you give in consumer co-creation can lower all these three risks. (4) secrecy concerns and the (5) sharing of intellectual property was each mentioned once during the interviews.

By comparing the theoretical and empirical results, it is evident, that most by literature indicated drivers are not valid in the German food industry. Companies operating in the German food sector mainly engage in consumer co-creation to gather new ideas. Furthermore they mention that consumer co-creation can be a great PR tool, which has not been mentioned in literature yet. By comparing the main impediments, one can say that they are all represented by the German food market, except the aspect, that consumer co-creation can be unprofitable.

6. Conclusion

The purpose of this study was to explore what companies in the German food industry motivate to use consumer co-creation and also what hinders them to use it. While connecting the results from different companies with different characteristics coming from different sub-sectors, key findings can be outlined.

New products are mostly of incremental nature.

The cases show that most new products they launch – whether through co-creation or not- are incremental innovations. Food companies view their consumers as conservative (Sakar & Costa, 2008) and their food preferences are rather stable and therefore they are hesitant in regard to radical new product innovations (Costa & Jongen, 2006). The conservative consumers paired with the strict safety regulations on the German market lead to mainly line extensions. And even the products developed through co-creation are of incremental nature, although co-creation can be a source of radical innovation.

Although research implies that there is a high rate of product failure in the food industry, this cannot be supported with the results from this study.

A lot of researchers found out that there is a high rate of product failure in this industry (Costa & Jongen, 2006; Menrad, 2004; Martinez, Biz, 2000) and even a study focusing on the German market supports this outcome (Madakam, 2001). However, the cases in this research mention, that most of their new products are successful. They indicate that around 80% of new products are successful.

Collaboration with consumers is perceived to lead to innovative products and value creation.

Consumers are perceived as being collaborative and as wanting to play an active role in product decisions. Furthermore, the analyzed cases believe that consumers can be co-producers of value and that they can help them coming up with great ideas for new products. The companies, who have engaged in consumer co-creation already, mentioned that they are highly satisfied with the

input consumers gave. They received great input and many ideas for new product and design variations.

Management needs to create a consumer-centric culture, in order for co-creation initiatives to be effective.

Co-creation can just be successful, when the company culture is open to engage consumers in the process and their input should be seen as a valuable contribution to the NPD process. Company's management needs to be committed to co-creation and needs to invest resources, such as money and people.

The readiness for consumer co-creation depends on the business life stage of the company.

Company's readiness for consumer co-creation does not just depend on the company's mindset, but also on the life stage the company is at. This analysis shows a clear trend, that companies in the start-up and growth phase have other priorities, such as building up their brand awareness nationwide. Companies in the upper business life stages show more experience with integrating consumers in their business operations and therefore a co-creation initiative is not that difficult for them to integrate. One company, who has not yet engaged in co-creation, also mentioned that it can improve the relationship between the consumer and the company, which is highly important in today's competitive business environment. Another company, who has already engaged in co-creation, mentioned that such a project should not be taken as just a normal obligation, but it is also a lot of fun for the employees involved in it. They also gave the tip to accompany such a initiative with PR in order to capture the most possible marketing and reach.

The generation of ideas and the increase of market acceptance are the main drivers.

All cases see the generation of new ideas for products as the main driver to engage in co-creation. As mentioned before, they believe that consumer nowadays are educated and knowledgeable to contribute valuable input. Furthermore, most companies mentioned that co-created product increase the market acceptance and that this fact would be a driver for them to engage in co-creation.

Information overload, product infeasibility and loss of control are the main impediments.

What can be seen is, that companies in early business life stages are hindered by more impediments, than companies in later stages and who are already have done a co-creation project. As mentioned, companies in the early business life stages show less experience in engaging with consumers and they mention that they need information and guidance on how to integrate co-creation in their business processes. However, it can be said that the main impediments, seen by most companies, are information overload, product infeasibility and loss of control. Companies fear that they receive too much input from consumers, which takes a lot of work to screen through. Furthermore, they are afraid, that consumers make proposals, which are not feasible for the company. And since most of the co-creation initiatives yield to produce the winner product, they are impeded that they might have to produce a product, which for example does not fit their brand essence or which cannot be produced with the current circumstances, e.g. machines and suppliers. Additionally most companies are afraid to loose control over the co-creation initiative in any way, which can also for example lead to a loss of brand essence. Furthermore, some companies mentioned that such a co-creation initiative is an additional project entering the daily business, which takes up a lot of manpower. Additionally it was mentioned by one company that they fear to share secrecy concerns and intellectual property. They do not know how much information they need to disclosure in order to generate a successful product.

As mentioned before, companies in early business life cycles mentioned more additional impediments. They stated that they have other priorities at the moment, such as building up brand awareness. Furthermore, they admitted that they are overwhelmed with the thought about integrating a co-creation initiative at the moment. This has several reasons, such as (a) their NPD process is not made for integrating consumers in it, (b) they have no experience with interacting with consumers yet, and therefore do not have an idea which consumers to involve and (c) a change of mindset of the employees is required.

7. Discussion and recommendations

Several recommendations regarding integrating online consumer co-creation initiatives in their business operations, in order to harvest the benefits, have been developed:

Building an interdisciplinary team to manage co-creation and which is fully supported by management by making it a company-wide strategy.

It is important that the management creates a company environment, which supports the co-creation initiative. A consumer-centric culture should be established, which values consumer input and sees the ability of consumers co-creating value. Furthermore, it should not just be seen as a task solely performed by the marketing and/ or NPD team. The different departments need to collaborate in order to guarantee the efficiency and effectiveness of the co-creation project. Especially in the food industry a lot of rules and regulations have to be complied to when producing a new product. When all departments, such as sales, purchasing, QM, marketing and food technology give their input and their guidelines on what is being possible, efficiency and effectiveness will be increased. Furthermore, management should assign sufficient resources, e.g. manpower and budget, to keep a smooth running of the online consumer co-creation project. When staff is too low to cover the additional activity, companies should hire additional experienced and knowledgeable employees, who have experience with engaging with consumers, in order to improve the ability to benefit from consumers input. Employees who are knowledgeable about consumer insights and who have the competencies to interact with consumers should be involved in building up a co-creation initiative.

Starting with a simple consumer co-creation project in order to draw learnings for future, more demanding initiatives.

There have been cases, where companies decided to offer the possibility to consumers to co-create and which turned out to be not what the company had in mind. For example, consumers did not take the initiative seriously and gave non-genuine input, which has been voted for by many people. In order to avoid loosing control over the initiative, companies should start with idea or design contests, because it is the simplest way to integrate consumer co-creation. It gives companies the change to test out co-creation and draw learnings from them. These key learnings

should be used to bring the guidelines to perfection for future, more complex initiatives. Going this path, will minimize the risks, as well as the complexity for the company.

Finding a balance between guidelines and room for creativity.

As already mentioned, company's should give some kind of guidelines in order for example to ensure the new product's feasibility and success. Having guidelines will make sure that the new product is in line with the brand and does not run the risk of loosing the brand essence. However, companies also need to be careful to not provide too many rules and guidelines, because this might cap of creativity. Customers still need to have enough freedom to probe their needs and preferences, which leads to a richer and more complete perception of how to create customer value. However, it is also necessary that these activities are guided to a certain degree in order to channel them to what the company needs (Zwick, Bonsu, Darmody, 2008).

This research uncovers the phenomenon of consumer co-creation in the German food industry and it might be useful for companies and academics, since it has not been researched yet. It is a practical contribution to the management society, because it provides recommendations to companies operating in the food industry about the pre-requisites needed for co-creation. These managerial implications should motivate more companies in Germany to engage in online consumer co-creation.

Although its contributions, the research also has some limitations. Because the subject at hand has not been researched before, an explorative study was necessary to uncover the drivers as well as the impediments of engaging in consumer co-creation. And this explorative nature of the study is its main limitation. The findings of this research are not generalizable beyond the German food industry case contexts included in this study and therefore this study is lacking a certain degree of external validity. This case study approach allowed an in-depth analysis of firms operation in the German food industry and I believe that these findings are comparable also for other food firms on that market. However, future researchers may set up large-scale studies in order to test the results. These studies should include multiple industries from the various food sectors. Furthermore, further research could focus on the product failure rate in the food industry. It is

significant, that literature states, that there is a high rate of product failure, which cannot be supported by this research. Therefore it would be interesting to find out what factors cause this discrepancy.

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APPENDIX A: Process of Building Theory from Case Study Research

Step	Activity	Reason
Getting Started	Definition of research question	Focuses efforts
	Possibly a priori constructs	Provides better grounding of construct measures
	Neither theory nor hypotheses	Retains theoretical flexibility
Selecting Cases	Specified population	Constrains extraneous variation and sharpens external validity
	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases—i.e., those that replicate or extend theory by filling conceptual categories
Crafting Instruments and Protocols	Multiple data collection methods	Strengthens grounding of theory by triangulation of evidence
	Qualitative and quantitative data combined	Synergistic view of evidence
	Multiple investigators	Fosters divergent perspectives and strengthens grounding
Entering the Field	Overlap data collection and analysis, including field notes	Speeds analyses and reveals helpful adjustments to data collection
	Flexible and opportunistic data collection methods	Allows investigators to take advantage of emergent themes and unique case features
Analyzing Data	Within-case analysis	Gains familiarity with data and preliminary theory generation
	Cross-case pattern search using divergent techniques	Forces investigators to look beyond initial impressions and see evidence thru multiple lenses
Shaping Hypotheses	Iterative tabulation of evidence for each construct	Sharpens construct definition, validity, and measurability
	Replication, not sampling, logic across cases	Confirms, extends, and sharpens theory
	Search evidence for "why" behind relationships	Builds internal validity
Enfolding Literature	Comparison with conflicting literature	Builds internal validity, raises theoretical level, and sharpens construct definitions
	Comparison with similar literature	Sharpens generalizability, improves construct definition, and raises theoretical level
Reaching Closure	Theoretical saturation when possible	Ends process when marginal improvement becomes small

Table 10: Process of Building Theory from Case Study Research
Source: Eisenhardt (1989).

APPENDIX B: Interview protocols

1. Interview pro consumer co-creation

Formale Daten

Datum:

Uhrzeit:

Ort:

Interviewer:

Interviewlänge:

Thema	Kategorie	Fragen
Allgemeine Informationen	Person / Job Position	• Seit wann arbeiten Sie für die Firma? • In welcher Abteilung arbeiten Sie und was ist Ihre Position innerhalb des Unternehmens? • Wie ist Ihre Abteilung im Unternehmen eingegliedert? (Organigramm) • Wie viele Mitarbeiter hat Ihre Abteilung? • Was sind Ihre Hauptaufgaben?
Allgemeine Informationen	Firma	• Welche Produkte (Produktgruppen) sind in Ihrem Portfolio/ in Ihrer Produktpalette?
Produktentwicklung	Produkte	• Wie oft entwickeln und führen Sie neue Produkte ein? • Wie viele davon sind erfolgreich? Wie viele Produkte scheitern? • Sehen Sie die Notwendigkeit innovativ zu sein und neue Produkte auf den Markt zu bringen? (z.B weil Mitbewerber sehr innovativ sind)
Produktentwicklung	Prozess	• Wer und welche Abteilungen sind bei Produktentwicklungen beteiligt? • Wie lange dauert es bis ein neues Produkt auf dem Markt kommt? • Was sind die Prozesse in Ihrer Produktentwicklung? Bitte nennen und erläutern Sie die einzelnen Schritte Ihrer Produktentwicklung (Idee,

		Konzeptentwicklung, Produktdesign, Produktprüfung und Produkteinführung) • Beziehen Sie Kundenmeinungen in die Produktentwicklung mit ein? Falls ja, in welchem Umfang? Falls nein, wieso nicht? • Welche Stärken und Schwächen sehen Sie in Ihrem Produktentwicklungsprozess?
Co-creation	Gebrauch	• Was denken Sie über Consumer Co-Creation? • Fragen Sie die Kunden aktiv nach Feedback/ Ideen? Wie machen Sie das? • Bitte erläutern Sie Ihre Co-creation Initiativen. • Worin sehen Sie die Stärken von Consumer Co-Creation? • Sie haben angegeben Sie nutzen Co-creation bereits. Haben Sie damit auch schlechte Erfahrungen gemacht?

2. Interview contra consumer co-creation

Formale Daten

Datum:

Uhrzeit:

Ort:

Interviewer:

Interviewlänge:

Thema	Kategorie	Fragen
Allgemeine Informationen	Person / Job Position	• Seit wann arbeiten Sie für die Firma? • In welcher Abteilung arbeiten Sie und was ist Ihre Position innerhalb des Unternehmens? • Wie ist Ihre Abteilung im Unternehmen eingegliedert? (Organigramm) • Wie viele Mitarbeiter hat Ihre Abteilung? • Was sind Ihre Hauptaufgaben?
Allgemeine Informationen	Firma	• Welche Produkte (Produktgruppen) sind in Ihrem Portfolio/ in Ihrer Produktpalette?
Produktentwicklung	Produkte	• Wie oft entwickeln und führen Sie neue Produkte ein? • Wie viele davon sind erfolgreich? Wie viele Produkte scheitern? • Sehen Sie die Notwendigkeit innovativ zu sein und neue Produkte auf den Markt zu bringen? (z.B weil Mitbewerber sehr innovativ sind)
Produktentwicklung	Prozess	• Wer und welche Abteilungen sind bei Produktentwicklungen beteiligt? • Wie lange dauert es bis ein neues Produkt auf dem Markt kommt? • Was sind die Prozesse in Ihrer Produktentwicklung? Bitte nennen und erläutern Sie die einzelnen Schritte Ihrer Produktentwicklung (Idee, Konzeptentwicklung, Produktdesign, Produktprüfung und Produkteinführung)

		• Beziehen Sie Kundenmeinungen in die Produktentwicklung mit ein? Falls ja, in welchem Umfang? Falls nein, wieso nicht? • Welche Stärken und Schwächen sehen Sie in Ihrem Produktentwicklungsprozess?
Co-creation	Gebrauch	• Was denken Sie über Consumer Co-Creation? • Fragen Sie die Kunden aktiv nach Feedback/ Ideen? Falls ja, wie machen Sie das? • Was hindert Sie daran Consumer Co-creation in Ihre Produktentwicklung zu integrieren?

APPENDIX C: Coding Guidelines

Category	**1. Sub-Category**	**2. Sub-Category**	**Coding Rule** Given answers that refer to:
NPD	New Products		Information about the company's new products including the number of new products and the time-to-market.
	Mixture of incremental and radical		The share of line extensions and absolutely new products.
	Success rate/ failure rate		The indication of how many products are successful on the marketplace after the launch.
	Process		Information about the NPD process and the individual stages.
	The part of the customer in NPD		Information about what part customers take in their NPD process. Do they follow a traditional way of gathering ideas through i.e. market research, surveys and questionnaires?

Pre-requisites for consumer co-creation	Need to be innovative		Information about pressure from the market or its competitors to be innovative.
	Consumer centric		Information about the company's mindset in regards to their centric view.
	Attitude towards customers		Information about what the company thinks about consumers.
	Consumer co-creation mindset	Authencity	Is the company viewed as ethical, transparent and trustworthy?
		Flexibility	Information about if the company is open to great variety of different and opposing points of views from consumers.

		Conviction	Information about, if the company follow-through on the co-creation initiative.

Structure of co-creation	Objectives		Information about what objectives the company has to engage in consumer co-creation.
	Arenas		Information about where they have engaged with the consumer (for example through customer communities, websites, social media).
	Collaborators		Information which refers to if and which consumers they select for their initiative.
	Tools & processes		Information about the tools and processes they use for their co-creation initiative.
	Contracts		Information, which refers if the marketers are aware of the motives of the consumers to participate and if measures are taken to ensure their willingness to contribute voluntary.

Motivation for consumer co-creation	Generating ideas		The driver of getting new ideas.
	Market acceptance		The view, that co-created products can increase market acceptance.
	Product quality		The benefit of increasing product quality through co-creation.
	Reduction of risk		The view, that co-created products can reduce the risk associated with the launch.
	Other motives		Other motives, which have not been mentioned before.

Impediments	Secrecy concerns		Information about if the company fears secrecy risks.
	Sharing of intellectual property		Information about if the company fears sharing of intellectual property.

	Information overload		The disadvantage of having too many information and ideas through co-creation initiatives.
	Product infeasibility		Information about the expected or experienced infeasibility of the co-created product.
	Unprofitability		Information about the expected or experienced rentability of the co-created product.
	Loss of control		Any indication that the company fears the risk of loosing control over the process.
	Other impediments		Other impediments, which have not been mentioned before.

Table 11: Coding guidelines
Source: Own elaboration.

APPENDIX D: Transcribed interviews

No public information