

# Customers' Innovation Potential: Exploring negative Consequences of Co-Creation with Customers

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## **Abstract**

Customer engagement behavior and the openness of firms to customer input have received much research attention lately. Evidence largely suggests that firms are generally interested in co-creation with customers and have become quite professional in managing their input. While existing research on co-creation activities has mainly addressed positive outcomes, both for the firm and for consumers, this dissertation deals with the so far neglected negative effects of integrating customers' knowledge in the innovation process (i.e., co-creation). It gives an overview of previous research on the effects of customer engagement behavior as it is manifested in co-creation. Two empirical studies analyze (1) the nature and the effects of firms' openness to customer engagement, especially their ideas and suggestions, on the market side; and (2) possible negative effects of firm behavior in integration activities on the consumer side. The first study investigates how firms deal with spontaneous, unsolicited customer-initiated contact that includes ideas and suggestions for novel products and services. On the basis of a study of business-to-consumer firms, it can be shown that two-thirds of all 410 customer inquiries with innovation potential are ignored. Of all inquiries that received a response, results show that 25% are rejected and that the professionalism of the responses is rather limited. Results also show that an inadequate handling of customer-initiated contact negatively affects a firm's image in the market. The second study examines how consumers react when firms ignore or reject their idea in co-creation activities and uncovers which psychological processes drive their reactions. The experimental study explores (1) whether consumers' attitude decreases due to negative experiences in co-creation activities, (2) whether different firm responses to submitted ideas lead to different levels of decrease in consumers' attitude and of intentions for negative word-of-mouth (WoM), and (3) whether consumers' anger mediates, and (4) consumers' expectations moderate the effects. Results reveal that all participants exhibit a decrease in attitude towards the firm. The decrease is significantly higher for the ignored group and also leads to a higher intention for negative WoM. Both effects are mediated by the feeling of anger. Results further indicate that when firms raise high expectations about their professionalism in conducting co-creation activities, ignored consumers get particularly frustrated. The dissertation discusses suggestions for managers and provides avenues for future research. Given that most firms will be neither willing nor able to work with every customer idea, managing the identified issues in an appropriate manner seems crucial.

## **Zusammenfassung**

In den letzten Jahren wurde der Offenheit von Unternehmen gegenüber Kundeninput und dem Engagement-Verhalten von Kunden in der wissenschaftlichen Forschung so wie auch in der Managementpraxis viel Aufmerksamkeit zu Teil. Es wird davon ausgegangen, dass Firmen an Co-Creation mit Kunden interessiert sind und sich sehr professionell im Management von Kundeninput zeigen. Auch zeigt die Forschung vor allem positive Auswirkungen für Unternehmen und Kunden auf. Diese Dissertation beschäftigt sich mit den bisher vernachlässigten negativen Effekten der Integration von Kundenwissen in den Innovationprozess. Zwei empirische Studien analysieren (1) Gegenstand und Effekte der Offenheit von Unternehmen gegenüber Kundeninput (d.h. Ideen und Vorschlägen) im Markt, und (2) konsumentenseitig die potentiellen negativen Effekte des Verhalten der Unternehmen in Co-Creation Aktivitäten. Die erste Studie analysiert wie Unternehmen mit spontanem, kunden-initiiertem Kontakt mit Ideen und Vorschlägen für neue Produkte und Services umgehen. Auf Basis einer Untersuchung von B2C Firmen kann gezeigt werden, dass zweidrittel aller 410 Kundenanfragen mit Innovationspotential ignoriert werden. Von allen Anfragen, die eine Antwort erhielten, werden 25% abgelehnt und die Professionalität der Antworten ist eingeschränkt. Die Ergebnisse zeigen weiterhin, dass ein inadäquater Umgang mit kunden-initiiertem Kontakt sich negativ auf das Image der Unternehmen im Markt auswirkt. Die zweite Studie erforscht wie Konsumenten reagieren, wenn Unternehmen ihre Ideen in Co-Creation Aktivitäten ignorieren oder ablehnen und welche psychologischen Prozesse dem zu Grunde liegen. Mit einem Experiment wird untersucht (1) ob sich die Einstellung der Konsumenten gegenüber den beteiligten Unternehmen als Folge einer negativen Erfahrung in Co-Creation Aktivitäten verschlechtert; (2) ob verschiedene Unternehmensreaktionen auf die übermittelten Ideen zu einem verschieden hohen Niveau dieses Effekts als auch zu verschiedenen hohen Intentionen für negativen Word-of-Mouth (WoM) führen; und (3) ob diese Effekte vom empfundenen Ärger der Konsumenten mediiert und von der Erwartung der Konsumenten moderiert werden. Sowohl ignorierte, als auch abgelehnte Teilnehmer zeigen nach der Co-Creation Aktivität eine negativere Einstellung gegenüber dem beteiligten Unternehmen. Diese Abnahme ist signifikant größer für die Gruppe der ignorierten Teilnehmer und diese weisen auch eine höhere Intention für negativen WoM auf. Beide Effekte sind vom empfundenen Ärger mediiert. Die Ergebnisse zeigen weiterhin, dass ignorierte Teilnehmer insbesondere Ärger zeigen, wenn Unternehmen hohe Erwartungen an ihre Professionalität im Durchführen von Co-Creation Aktivitäten wecken.

Die Dissertation diskutiert Vorschläge für die Managementpraxis und zukünftige Forschung. Der Umgang mit den in dieser Dissertation aufgezeigten Sachverhalten erscheint besonders wichtig in Anbetracht der Tatsache, dass die meisten Unternehmen weder willens noch in der Lage sind mit jeder einzelnen übermittelten Idee zu arbeiten.

# Contents

<b>Abstract</b>	<b>ii</b>
<b>Zusammenfassung</b>	<b>iii</b>
<b>Contents</b>	<b>iv</b>
<b>List of Figures</b>	<b>vi</b>
<b>List of Tables</b>	<b>vi</b>
<b>1. General Introduction</b>	<b>1</b>
<b>1.1. Issue and Motivation</b>	<b>1</b>
<b>1.2. Aims of the Research and Methodology</b>	<b>4</b>
<b>1.3. Outline of the Dissertation</b>	<b>6</b>
<b>2. The Integration of Customers' Knowledge into the Innovation Process</b>	<b>8</b>
<b>2.1. Customers' Innovation Potential – Customers as a Source of Innovation-Related Knowledge and Co-Creators of Value</b>	<b>8</b>
<b>2.2. Empirical Research on the Effects of Integrating Customer Input into the Innovation Process</b>	<b>10</b>
2.2.1 Positive effects for firms	10
2.2.2 Positive effects for customers	12
2.2.3 Potential negative effects for firms and customers	12
<b>2.3. Practical Approaches to Integrate Customer Input into the Innovation Process</b>	<b>14</b>
<b>3. How interested are Firms really in Customers' Innovation Potential? Status Quo and Effects</b>	<b>18</b>
<b>3.1. Introduction</b>	<b>18</b>
<b>3.2. Conceptual Framework and Development of Hypotheses</b>	<b>20</b>
3.2.1 The value of customers and their engagement for firms	20
3.2.2 A firm's openness to customer input	21
3.2.3 Firms' behavior when being confronted with different type of customer input	22
3.2.4 Consequences of a firm's openness to customer input on its image in the market	25
<b>3.3. Research Methodology</b>	<b>29</b>
3.3.1 Sample and design	29
3.3.2 Measures	29
3.3.2.1 A firm's openness to customer input	29
3.3.2.2 A firm's image in the market	30
3.3.2.3 Controls	30
<b>3.4. Analyses and Results</b>	<b>33</b>
3.4.1 Descriptive analyses and results	33
3.4.2 Multivariate regression analyses and results	35
<b>3.5. Discussion</b>	<b>39</b>
<b>3.6. Limitations and Suggestions for Future Research</b>	<b>43</b>
<b>3.7. Appendix</b>	<b>46</b>
<b>4. Thanks, but No, Thanks! The Pitfalls of Inviting Customers to Co-Create with Firms</b>	<b>48</b>
<b>4.1. Introduction</b>	<b>48</b>
<b>4.2. Theoretical Framework and Hypotheses</b>	<b>51</b>
4.2.1 Co-creation activities and potential negative effects	51
4.2.2 Social exclusion	52
4.2.3 Effects of being rejected or ignored on consumers' attitudes and behavior	54

4.2.4 The mediating role of anger.....	57
4.2.5 The moderating effect of consumers' expectations.....	58
<b>4.3. Experimental Study.....</b>	<b>60</b>
4.3.1 Overview.....	60
4.3.2 Method.....	60
4.3.2.1 Participants and design.....	60
4.3.2.2 Procedures.....	60
4.3.2.3 Measures.....	62
4.3.3 Analyses and results.....	64
4.3.3.1 Preliminary analyses.....	64
4.3.3.2 Main effects.....	64
4.3.3.3 Mediation via anger.....	66
4.3.3.4 Moderating impact of consumers' expectations.....	67
<b>4.4. Discussion and Managerial Implications.....</b>	<b>69</b>
<b>4.5. Limitations and Suggestions for Future Research.....</b>	<b>71</b>
<b>4.6. Appendix.....</b>	<b>74</b>
<b>5. Overall Summary and Managerial Implications.....</b>	<b>75</b>

References

vii

## **List of Figures**

**Figure 1.** Estimates of different scenarios

**Figure 2.** Mediation via Anger

**Figure 3.** Effect of Firm's Response and Expectations on Anger (self-reported)

## **List of Tables**

**Table 1.** Firms' Responses to Customer-initiated Contact with Different Customer Potentials

**Table 2.** Firms' Responses to Inquiries with Innovation Potential in different Sectors

**Table 3.** Estimation Results of Model 1

**Table 4.** Estimation Results of Model 2

**Table 5.** Effects of Firm Response: ANOVA Results

# 1. General Introduction

## 1.1. Issue and Motivation

An increasing number of firms are integrating customer input into the innovation process and thereby allowing them to contribute their knowledge or even participate actively in the innovation process. Concurrently, customer engagement behavior and openness to co-creation with customers has been a hot research topic in the service and new product development literature (e.g., Hoyer et al. 2010; Jaakkola and Alexander 2014; Kumar et al. 2010; Laursen and Salter 2014; 2006; Mahr, Lievens, and Blazevic 2014). The practice and research literature has mentioned and investigated numerous forms of activities and tools to integrate this knowledge (e.g., Hienerth, Keinz, and Lettl 2011; Von Hippel 1995; 2005). Most empirical studies support the positive effects of integrating customers and their so-called innovation potential into the process of developing new and improving existing products and services (e.g., Eisingerich, Auh, and Merlo 2014; Kristensson, Gustafsson, and Archer 2004; Magnusson 2009). For instance, firms can increase their efficiency (e.g., reduce costs) and effectiveness (e.g., create a closer fit with consumers' needs) in innovation processes (e.g., Fang, Palmatier, and Evans 2008; Franke, Keinz, and Steger 2009; Hoyer et al. 2010). In addition, customers who are integrated and included are said to derive enjoyment and satisfaction from this, which increases the value of the developed products from the customer's perspective and concurrently results in positive effects for the firm (e.g., Franke, Keinz, and Steger 2009; Fuchs, Prandelli, and Schreier 2010; Gallan et al. 2013; Von Hippel 2005).

Being open to customer input has also been heavily promoted by the business press as one of the new management paradigms (Boudreau and Lakhani 2013; Chesbrough 2011; Lampel, Jha, and Bhalla 2012; West et al. 2014). Firms appear to have followed this trend and emphasized their openness towards customer input. On the basis of the harmonized methodology of the Eurostat Community Innovation Survey (CIS 2012) (ZEW 2014), the German Innovation Survey 2013 (Aschhoff et al. 2014) found that 37.5 percent of firms stated a high utilization of customers as sources of their innovation. For these firms the most important innovation partner to collaborate with is the customer. By contrast, only 21.5 percent of the firms stated that they do not currently use customers as sources of innovation. In addition, throughout various industries, slogans like "*You talk... We listen*" (Caterpillar 2012), "*We promise to listen and learn*" (TNT 2012), and "*We listen. You win*" (Dell 2012) are common and underscore the notion that engaging customers, and especially soliciting

their ideas and suggestions, is highly valued. Firms utilize different forms of integration activities to capture customers' knowledge (Claycomb, Lengnick-Hall, and Inks 2001; Dahlander and Piezunka 2014; Fuchs and Schreier 2011; Nambisan and Baron 2009).

In new product development research numerous studies exist that have investigated how firms manage their customers' innovation potential. However, the majority of these studies have focused on firm-initiated integration activities, in which firms explicitly encourage and invite ideas primarily through event-related activities. For instance, the literature refers to lead-user workshops, idea competitions, and idea platforms (e.g., Björk and Magnusson 2009; Dahan and Hauser 2002; Franke, Von Hippel, and Schreier 2006; Piller and Walcher 2006). However, there is only sparse documentation on the management of customer-initiated contact, which involves customers contacting firms deliberately and voluntarily to offer novel ideas and suggestions. This research gap is surprising since the majority of firms encounter this kind of contact on a regular basis. The findings of the few available exploratory studies on customer-initiated contact with innovation potential suggest that firms largely struggle when confronted with such inquiries and tend to handle them inadequately (e.g., ignoring, rejecting, and dealing with customer ideas in an unprofessional manner) (Alexy, Criscuolo, and Salter 2012).

However, most forms of integration activities—customer-initiated and firm-initiated—lead to the question of what happens if an idea or suggestion submitted by a customer is undesired or remains utterly unnoticed. In the online idea community for Starbucks, a customer recently critically noted: *“It would be great if comments and questions were ‘answered’ instead of ignored. That looks so bad and indifferent.”* (Starbucks Coffee Company 2013). This is not really surprising assuming that a firm that engages in integration activities will not be able to work with every idea it receives. The firm might face the problem of many contributors of ideas and suggestions, but only a limited capacity to receive them and respond (Piezunka and Dahlander 2014). In addition, customer-generated ideas often fall short in terms of quality, novelty, and feasibility, or simply do not match firms' expectations (Alexy, Criscuolo, and Salter 2012; Berthon et al. 2011; Dahlander and Piezunka 2014; Hoyer et al. 2010; Piezunka and Dahlander 2014; Poetz and Schreier 2012).

The examination of this issue seems crucial for firms that are willing to integrate customers as a source of knowledge in their innovation processes inasmuch as there is a possibility of leaving behind disappointed and unsatisfied customers (Gebauer, Füller, and Pezzeri 2013). However, there is still a lack of studies that investigate the negative consequences of participants that have been ignored, rejected, or feel they have been treated

inadequately by the firm. As yet there are only anecdotal references and case studies (Breithut 2011; Gebauer, Füller, and Pezzei 2013). For instance, in 2011 Henkel initiated a contest to design new bottle labels for the company's Pril brand dishwashing liquid (Henkel 2012). The most popular designs did not meet with Henkel's expectations, so they revoked the power of the consumer community to choose and instead put it in the hands of a company jury. The participants were dissatisfied with the outcome and almost unanimously reported a poor experience (e.g., with regard to how badly Henkel treated them). Participants that had been loyal and committed customers before the contest subsequently engaged in a negative word-of-mouth campaign and launched a protest against Henkel (Breithut 2011). Gebauer, Füller, and Pezzei (2012) found similar behavior in a field study on customers' co-creation experience in a design contest. So far, empirical evidence in this respect is still missing. This dissertation is thus motivated by a desire to address the aforementioned lack of research by empirically analyzing (1) the nature and the effects of firms' openness to customer engagement, especially their ideas and suggestions, on the market side; and (2) possible negative effects of firm behavior in integration activities on the consumer side.

## **1.2. Aims of the Research and Methodology**

In detail, this dissertation project aims to contribute to the literature by addressing the following research topics.

The first aim of this dissertation is to build a conceptual introduction that defines basic terms and gives an overview of previous research on the effects of customer engagement behavior as it is manifested in co-creation and thus integration of customer input into the innovation process. This dissertation reviews empirical studies that have focused on how and when firms as well as customers are affected by the integration of customer input (i.e., their ideas and suggestions). In addition, approaches to the integration of customer input into the innovation process are summarized and compared.

Secondly, this dissertation questions whether firms are genuinely interested in customers' innovation potential. In exploring firms' openness to customer input (when being contacted by customers with an idea or suggestion), this dissertation can extend existing literature by observing actual firm behavior. Thus, it provides a valid indication of whether or not firms indeed use customers as an external knowledge resource and how professionally their input is handled.

Thirdly, this dissertation investigates to what extent a firm's behavior affects its image in the marketplace. It thus contributes to new product development and service research by investigating how different types of firm behavior (i.e., encouraging, ignoring, rejecting, or handling customer inquiries in an unprofessional manner) influence how a firm is perceived by consumers.

Fourthly, this dissertation explores possible negative consequences on the consumer side (i.e., consumers' attitude and intentions) that may follow different firm reactions to the ideas that are submitted during integration activities. This dissertation explores what drives consumers' psychological and behavioral reactions by analyzing underlying emotions (mediating effect) and specific expectations of consumers (moderating effect).

To answer these research questions, the author of this dissertation conducted a mixed-method approach using several complementary elements. A review of existing research in the field of co-creation and the integration of customer input in the innovation process serves to lay the theoretical foundation for the following empirical studies. The first study empirically observes the nature and the effects of firms' openness to customer input in the field (i.e., actual behavior on the market side). This study involves the collection and analysis of qualitative and quantitative data. To enhance its generalizability, firms that produce different goods (i.e., fast-moving consumer goods, durables, and services) are included. Furthermore,

these firms are based in the United States, Asia, as well as Europe; they compete on price and quality; and they exhibit small and large market shares. Data for the independent, dependent, and control variables were collected from different sources. Thus, concerns about common source bias can be alleviated (e.g., Podsakoff 1986; Podsakoff et al. 2003). The fact that the analyses are based on actual response behavior also helps to avoid issues of key informant subjectivity (e.g., Phillips 1981).

As a next step, the second empirical study changes the perspective of the investigation and turns to individual consumer behavior. The experimental study that was conducted analyzes whether and how consumers' intention and actual behavior change in response to how firms respond to their ideas and suggestions and which processes (i.e., mediating or moderating effects) are responsible for these effects. Only by precisely controlling experimental conditions in a supervised environment can changes and differences in consumer attitudes, emotions, and intentions be clearly attributed to a particular firm behavior. Furthermore, a laboratory setting enables a reliable measurement of emotions (mediating effect) as well as direct manipulation of consumer expectations (moderating effect) to investigate whether their influence is in the expected direction (e.g., Sawyer, Worthing, and Sendak 1979; Winer 1999). Again, qualitative and quantitative data was collected and analyzed. Special attention is paid to the measurement of emotions. The participants' self-reported emotions (verbal) are complemented by visual observation of distinguishable and anatomically based units of facial muscle movements (nonverbal) (e.g., Cohn, Ambadar, and Ekman 2007; Ekman 1992; Ekman and Oster 1979). Thus, the advantages of a subjective (verbal) and objective (nonverbal) operationalization are combined (e.g., Terzis, Moridis, and Economides 2011). The facial expressions were analyzed using the Noldus FaceReader 5.0 software (Noldus 2012). This software allows participants to be recorded with digital video at 25 frames per second and thus provides a detailed assessment of real response behavior (e.g., Chentsova-Dutton and Tsai 2010; Danner et al. 2014; Den Uyl and Van Kuilenburg 2005).

In summary, combining an analysis of actual behavior on the market side in the field in the first study (Chapter 3) and consumer behavior in a laboratory experiment in the second (Chapter 4) ensures high external as well as internal validity (e.g., Lynch 1982; Winer 1999). Moreover, the mixed-method approach allows the analyses to address the research problems more comprehensively and reveals high-quality and complex inferences (e.g., Teddlie and Tashakkori 2009).

### **1.3. Outline of the Dissertation**

The dissertation is composed of five chapters. Chapter 2 presents the theoretical foundation and a review of the background literature. Chapters 3 and 4 present the empirical studies that were conducted and can also be read independently. For this reason, it is possible that there is some overlap between the different chapters. The research idea behind this dissertation (including the empirical studies presented in Chapters 3 and 4) was honored by the PDMA (Product Development and Management Association) during the PDMA-UIC (University of Illinois at Chicago) Doctoral Consortium in Chicago in 2011. Since Chapters 3 and 4 are a joint work with Katrin Talke, the first-person plural “we” and not the singular “I” was used in this part of the dissertation. The author of this dissertation was responsible for elaborating on the research idea, collecting and analyzing all data, and for writing substantial parts of the paper.

By relying on the empirical observation of actual behavior on the market side, Chapter 3 focuses on the nature and the effects of firms’ openness to customer input in the field. The research conducted investigates how firms deal with spontaneous, unsolicited customer-initiated contact that includes ideas and suggestions for novel products and services. A study of business-to-consumer firms showed that more than two-thirds of all 410 customer inquiries with innovation potential were ignored. Of all the inquiries that received a response, 25 percent were rejected and the professionalism of the responses was rather poor. The results also show that an inadequate handling of customer-initiated contact negatively affects a firm’s image in the marketplace. Given that most firms will be neither willing nor able to work with every customer-generated idea, managing this engagement behavior in an appropriate manner seems crucial. On the basis of the findings, suggestions for managers are derived and avenues for future research identified. A prior version of the paper presented in Chapter 3 was presented and published as part of the International Product Development Conference (IPDMC) 2012 in Manchester, England (Urban and Talke 2012), and European Marketing Association Conference (EMAC) 2013 in Istanbul, Turkey (Urban and Talke 2013). In addition, this paper won the “Thomas. P. Hustad Best Student Paper Award” at the IPDMC 2012. A prior version presented in this dissertation was invited for resubmission to the *Journal of Service Research* (second review round). The version presented in this dissertation acts as basis for the planned resubmission.

Chapter 4 shifts the perspective from the market to the consumer level. It focuses on the negative experiences of participants in idea contests (i.e., when their ideas are ignored or rejected) and analyzes which underlying processes are responsible for the negative effects.

The results of a laboratory experiment reveal that being ignored or rejected both have a detrimental effect on consumers' attitude towards and trust in the firm. However, the effect is worse for being ignored and leads to a higher intention to engage in negative word-of-mouth (WoM). The results further indicate that the feeling of anger mediates the effect of the negative experience on consumers' attitude towards the firm and their intent to engage in negative WoM. In addition, the effect of a firm's response (ignoring versus rejection) on perceived anger is moderated by the expectations participants have before the idea contest, such that it is stronger for a high level of expectation than for a low one. From these findings, suggestions for managers are derived and avenues for future research identified. The paper presented in this dissertation will be presented and published as part of the IPDMC 2015 in Copenhagen, Denmark (Urban and Talke 2015)

Finally, Chapter 5 of this dissertation closes with a summary of the studies' main findings and gives implications for management practice. Based on the overall findings of this dissertation, preliminary strategies can be derived as to how firms should proceed when there is a lack of interest in a customer's idea in order to avoid negative effects on their image in the marketplace as well as direct undesirable consequences on consumer behavior.

## 2. The Integration of Customers' Knowledge into the Innovation Process

### 2.1. Customers' Innovation Potential – Customers as a Source of Innovation-Related Knowledge and Co-Creators of Value

Since the late 1970s, marketing and innovation literature has recognized customers and consumers<sup>1</sup> as usability experts owing to their firsthand experience with products and as both a source and initiator of innovation as a result of unfulfilled needs (e.g., Von Hippel 1978). Customers are suggested to have the most accurate and detailed information about their own existing and emerging needs (e.g., Franke, Von Hippel, and Schreier 2006; Von Hippel 1995; 2005; Kristensson, Gustafsson, and Archer 2004). Thus, they are a valuable, rare, and imperfectly imitable knowledge resource that “*can lead to a sustainable competitive advantage [as it] enables a firm to either exploit opportunities or avoid threats.*” (Lengnick-Hall 1996). In the traditional model of innovation, Von Hippel (1978) referred to the “*manufacturer-active-paradigm,*” in which solely the manufacturer (i.e., the firm) is responsible for and provides solutions to (i.e., its products and services) customers' needs, and the customer has only a passive role (“*speaking only when spoken to*”) (Von Hippel 1978; 1995; 2005; Thomke and Von Hippel 2002). However, customers are said to be able to solve these needs themselves – a skill that previously had only been attributed to firms (Lüthje, Herstatt, and Von Hippel 2006). Von Hippel (e.g., 2005) described this turning away from the traditional model as the “*customer-active paradigm*”. In this case, customers' input is not limited to their need for articulation, but includes their personal engagement, manifested in the transfer of, for instance, concrete ideas and suggestions and even complete prototypes (e.g., Von Hippel 2005; Lüthje, Herstatt, and Von Hippel 2006). A customer is no longer seen as a passive value recipient, but also as an active creator of value for the firm (e.g., Hoyer et al. 2010; Kumar et al. 2010; Vargo and Lusch 2004; 2008).

The potential of a customer to actively create and contribute to firm value is captured in the concept of value contributions (e.g., Lengnick-Hall 1996). According to this concept, customers can contribute to firm value both through transactions and through engagement behavior that goes beyond transactions (e.g., Kumar et al. 2010; Lengnick-Hall 1996;

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<sup>1</sup> The customer is a person who buys a product or service; the consumer is a person who uses and benefits from it. In most cases consumers are also customers, but they do not necessarily have to be. This dissertation examines the customer as well as the consumer/user as source of innovation-related knowledge and co-creators of value (e.g., Bogers, Afuah, and Bastian 2010; Von Hippel 2005; Hoyer et al. 2010). Thus, in the first and second chapters, the term *customer* is employed as a synonym for *consumer* or *user* (Kaulio 1998). Whereas the first empirical study in Chapter 3 concentrates on the customer in studying the effects on a firm's image in the marketplace, the second study in Chapter 4 observes individual consumer behavior.

Verhoef, Reinartz, and Krafft 2010). A customer's transactions have a direct impact and are thus closely related to product and firm success. They are related to customers' sales potential (e.g., initial and future purchases of a product, cross-selling and up-selling throughout the product portfolio). Customer engagement behavior has a less immediate, more indirect impact on performance. Van Doorn and colleagues (2010, p. 254) define this behavior "*as a customer's behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers.*" Customer engagement behavior is regularly divided into (1) *referral and influencing behavior* and (2) *co-creation* (e.g., Eisingerich, Auh, and Merlo 2014; Jaakkola and Alexander 2014). Referral and influencing behaviors describe customers engaging in customer-to-customer interaction. Thus, these capture *customers' referral potential* to attract and acquire new customers by means of recommendations and positive WoM (Bodapati 2008; Kumar et al. 2010). Co-creation describes activities in which customers actively engage in and jointly contribute to a new product development process (e.g., Hoyer et al. 2010; O'Hern and Rindfleisch 2010; Vargo and Lusch 2004). Thus, *customers' innovation potential* includes the information and knowledge potential of existing as well as new customers (Franke, Von Hippel, and Schreier 2006; Von Hippel 2005; Kumar et al. 2010; Walter, Ritter, and Gemünden 2001). Customers therefore add value by contributing relevant input to the development of new products and services or to the improvement of existing products and services (e.g., through providing feedback, ideas, and suggestions to the firm) (Hoyer et al. 2010; Kumar et al. 2010; van Doorn et al. 2010).

Unfortunately, customers' knowledge of their needs and also the knowledge of how to address those needs is often complex, tacit, and "*sticky*" in nature (Franke and Piller 2004; Von Hippel 1994; 2005). Thus, customer knowledge is difficult and often costly to transfer (Von Hippel 2005; Rosenberg 1982). However, when facing high rates of market failure and existing offerings that do not yet satisfy customers' needs, firms have tried to integrate customer input into the innovation process (e.g., Von Hippel 2005; Ogawa and Piller 2006). Some have developed several activities and tools with which customers' knowledge can be transferred and customers can contribute to the innovation process (e.g., Hienerth, Lettl, and Keinz 2014; Von Hippel 2005; Sawhney, Verona, and Prandelli 2005) (see Section 2.3). In doing so, firms benefit from customers' innovation potential and co-create value with them (Hoyer et al. 2010; Kumar et al. 2010; Mahr, Lievens, and Blazevic 2014). This co-creation of value is described as the co-production of knowledge by activities in which customers contribute to the firm's innovation process (e.g., Kristensson, Gustafsson, and Archer 2004; Magnusson 2009; O'Hern and Rindfleisch 2010; Salge et al. 2013; Vargo and Lusch 2004).

## **2.2. Empirical Research on the Effects of Integrating Customer Input into the Innovation Process**

There is a substantial body of conceptual research in the field of customer engagement behavior, the co-creation of value with customers, and the integration of their knowledge into the innovation process. There is also a wide range of empirical studies that thoroughly investigate how, when, and why these approaches can help to increase the effectiveness and efficiency of the innovation process as sources of competitive advantage (e.g., Franke, Keinz, and Steger 2009; Fuchs and Schreier 2011; Schreier, Fuchs, and Dahl 2012). Research has also focused on the positive relational effects (e.g., Auh et al. 2007; Chan, Yim, and Lam 2010). In addition to these positive effects for firms, prior studies have investigated the positive outcomes for participating customers as well (e.g., Franke and Schreier 2010; Schreier 2006). The following section gives an overview of the empirical research in service, customer management, and new product development literature.

### **2.2.1 Positive effects for firms**

A wide range of existing research deals with the greater *effectiveness* of the innovation process when integrating customers' input. In general, the integration of customer input enhances innovation. In addition, corporate innovations are assessed to be of greater importance when developed with customer input (Chatterji and Fabrizio 2012; 2013; Laursen 2011). In detail, there is evidence that the resulting ideas, concepts, and final products and services are shown to be of high originality, novelty (i.e., new-to-market), and benefit, which can lead to increased commercial success (Gruner and Homburg 2000; Kristensson, Gustafsson, and Archer 2004; Magnusson 2009; Magnusson, Matthing, and Kristensson 2003; Mahr, Lievens, and Blazevic 2014; Morrison, Roberts, and Von Hippel 2000; Poetz and Schreier 2012; Urban and Von Hippel 1988; Witell et al. 2011). In addition, the closer fit with customers' preferences (i.e., fit-to-market) (Franke and Schreier 2010; Franke, Schreier, and Kaiser 2010; Kristensson, Gustafsson, and Archer 2004; Magnusson, Matthing, and Kristensson 2003) increases customers' positive attitudes towards the product and consequently their purchase intentions as well (Franke and Von Hippel 2003; Mahr, Lievens, and Blazevic 2014; Schreier 2006; Urban and Von Hippel 1988). The results of several studies indicate that customers who are included frequently enjoy the process and perceive the new product to have a greater value (Fang, Palmatier, and Evans 2008). Both justify higher prices for the developed products (Franke and Von Hippel 2003; Franke and Piller 2004; Franke and Schreier 2010; Franke, Schreier, and Kaiser 2010; Franke, Keinz, and

Steger 2009; Schreier 2006). However, the ordinary customer who is not included in integration activities values the closer fit of the co-created products to his or her own preferences by exhibiting a higher willingness to pay (Franke and Von Hippel 2003; Herstatt and Von Hippel 1992; Urban and Von Hippel 1988). In addition, the integration of customers enhances their attitudinal and consequently their behavioral loyalty (Auh et al. 2007). This can also result in an increased intent to co-create value in the future (Dong, Evans, and Zou 2008). The relational value for the employees who are involved in the interaction with the customer also increases, which has the potential to lead to increased job performance for these employees (Chan, Yim, and Lam 2010). Moreover, customer participation has been determined to be a crucial link between customers' satisfaction and their repurchase behavior (Eisingerich, Auh, and Merlo 2014). In service research, several studies found that the customers who were involved in integration activities perceived a higher service quality and experienced higher satisfaction with service solutions and service recovery (Chan, Yim, and Lam 2010; Claycomb, Lengnick-Hall, and Inks 2001; Dong, Evans, and Zou 2008; Gallan et al. 2013). Moreover, higher levels of customer participation have been found to improve customers' perceptions of the quality of the service provider (Gallan et al. 2013). Fuchs, Prandelli, and Schreier (2010) found that even the mere perception that firms integrate and empower their customers increases the perception that the firm is customer oriented and leads to more favorable corporate attitudes and stronger behavioral intentions. Moreover, the so-called "*innovation effect of user design*" can also lead to increased purchase intentions and a higher willingness to pay for customers who have not been integrated as well as positive WoM (Schreier, Fuchs, and Dahl 2012).

Studies dealing with the greater *efficiency* of the innovation process due to the integration of customer input reported above all the possibility to minimize costs by means of a faster and cheaper development of products (i.e., cost to market and speed to market). In particular, the virtual integration of customers in the innovation process is found to be cheaper than traditional approaches (Dahan and Hauser 2002; Dahan and Srinivasan 2000; Thomke 1998). Cost minimization can be also achieved to the extent that employees' input can be substituted with and complemented by customer input (Bowers, Martin, and Luker 1990; Lovelock and Young 1979). Moreover, integrating customer input can decrease costly market research efforts. The results of a study by Witell and colleagues (2011) indicate that the relationship between the use of certain techniques and the profit margin is stronger for co-creation techniques than it is for the traditional market research techniques. With regard to the overall costs of the development of new products, several studies were able to show that

innovation projects with the integration of customer input were cheaper than projects without such integration (Claycomb, Lengnick-Hall, and Inks 2001; Herstatt and Von Hippel 1992; Von Hippel 2005; Thomke 1998; Thomke and Von Hippel 2002). Moreover, innovation projects that include the integration of customer input tend to be shorter than traditional ones since fewer decision rounds seem to be needed. Thus, new products can be launched faster (Claycomb, Lengnick-Hall, and Inks 2001; Herstatt and Von Hippel 1992; Thomke 1998).

### **2.2.2 Positive effects for customers**

As mentioned before, products and services developed with the integration of customer input show a closer fit to customers' preferences (Franke and Schreier 2010; Franke, Schreier, and Kaiser 2010; Kristensson, Gustafsson, and Archer 2004; Magnusson, Matthing, and Kristensson 2003). The closer this fit is, the higher the benefit and value for the customer (Chan, Yim, and Lam 2010; Claycomb, Lengnick-Hall, and Inks 2001; Fang, Palmatier, and Evans 2008; Franke, Keinz, and Steger 2009). Evidence shows that customers feel greater satisfaction with the product or service if integrated into the innovation process (Dong, Evans, and Zou 2008). In addition, in a service context, studies by Dong et al. (2015) were able to show that this relationship is moderated by customers' readiness to participate (i.e., perceived ability, perceived benefit, identification with the participation role). There are also positive effects that are not related to the outcome but to the innovation process itself. Customers have been found to derive enjoyment from, for instance, solving problems or designing new products (Dahl and Moreau 2007; Franke and Schreier 2010; Von Hippel 2005; Schreier 2006). Thus, the integration itself can be a source of hedonistic benefit for the customer (Nambisan and Baron 2009). In addition, several studies have observed the relational value that occurs when a customer is integrated and relies on the interaction with and relational approval from the firm (Chan, Yim, and Lam 2010).

### **2.2.3 Potential negative effects for firms and customers**

Empirical research on the potential negative effects of the integration of customer input for firms as well as participating customers is rare. A study by Enkel, Kausch, and Gasmann (2005), exploratory in nature, described potential risks for firms (e.g., loss of expertise to the customer, limitation to incremental innovations only) but did not observe the interaction between firm and customer. Only Chan, Yim, and Lam (2010) observed the further possibility of increased job stress for the firm's employees, in addition to the already described positive effects for the firm and customer. This research gap is surprising given that

various authors point out that the integration of customer input and the co-creation of value is risky and needs a careful assessment, especially when firms are new and unskilled in that area. Negative effects can occur if firms fail to provide positive experiences during the integration process (Balka, Raasch, and Herstatt 2014; Dahlander and Piezunka 2014; Di Gangi 2010). Recently, researchers have only offered anecdotal evidence and individual case studies implying that negative experience during an integration activity and dissatisfaction with its outcome might lead, for instance, to negative WoM (Breithut 2011; Gebauer, Füller, and Pezzeri 2013). Gebauer and colleagues (2012) investigated personal outcomes for participants of an international online design contest for shopping bags. They found that especially disappointed participants that experienced dissatisfaction with the outcome showed negative reactions after the activity (e.g., negative WoM). Heidenreich and colleagues (2015) investigated the possible negative consequences of the co-creation experience. However, this study only examined failed co-creation experiences caused by service failure as an outcome of the process.

This described lack of empirical research is surprising as the very nature of most practical approaches to integrate customer input in the innovation process introduces the potential problem of many contributors of ideas and suggestions but only a limited capacity for recognition or response on the part of the firm (Piezunka and Dahlander 2014). Even if such capacities are sufficient, firms will select only novel, good, and suitable ideas (Bayus 2013). Furthermore, there are certain activities (e.g., idea contests) that are designed to be competitions and thus ensure “looser” ideas (Franke, Keinz, and Klausberger 2013; Terwiesch and Xu 2008). Moreover, the perception of the process as a good or bad experience was shown to be partly constructed on the basis of its outcome (Franke, Schreier, and Kaiser 2010).

### 2.3. Practical Approaches to Integrate Customer Input into the Innovation Process

Innovation literature describes a wide range of activities and tools for the integration of customer input (e.g., Franke, Von Hippel, and Schreier 2006; Hienerth, Keinz, and Lettl 2011; Von Hippel 1995; 2005). These activities are very diverse in nature. There are also many differences in the literature that, of all the various and possible characteristics, should be used when describing and classifying these approaches (Cui and Wu 2015; Hienerth, Lettl, and Keinz 2014; Keinz, Hienerth, and Lettl 2012).

Several authors identified the stage of the innovation process in which customer input is integrated as a key characteristic of integration activities (e.g., Brockhoff 2003; Dahan and Hauser 2002; Kaulio 1998; Nambisan 2002; Prandelli, Verona, and Raccagni 2006; Sawhney, Verona, and Prandelli 2005). They argue that different activities are commonly used at different stages of the innovation process (i.e., idea generation and selection, product design and testing, market launch, and post-launch). In addition, activities can be classified according to the question of who initiated the contact between customer and firm (e.g., Brockhoff 2003; Ernst 2004; Von Hippel 1978; 1995; 2005; Thomke and Von Hippel 2002). One can distinguish between *firm-initiated contact* (FIC) and *customer-initiated contact* (CIC) (Bowman and Narayandas 2001; Lüthje, Herstatt, and Von Hippel 2006). Concentrating on the stage of idea generation and selection, O'Hern and Rindfleisch (2010) offered a typology that distinguishes between customer-led and firm-led activities. Following Bayus (2013), integration activities can also be classified by whether they are temporary and event-related (i.e., customer input is integrated *once*) or continuous (i.e., customer input is integrated *repeatedly*) (see also Keinz, Hienerth, and Lettl 2012) for an examination of the duration of activities). Even with this in mind, it is suggested to consider the depth, breadth, and the level of interaction between the individual participant and the firm (e.g., Di Gangi 2010; Von Hippel 2005; Kaulio 1998; Lüthje, Herstatt, and Von Hippel 2006; Prandelli, Verona, and Raccagni 2006; Sawhney, Verona, and Prandelli 2005). Cui and Fang (2015) refer to customer involvement (1) as an information source, (2) as co-developers, and (3) as innovators. These different forms also come along with different ways of utilizing customer knowledge and different impact on product performance.

Another possible characteristic is the freedom of scope for customers participating in the activities (Di Gangi 2010; Franke, Schreier, and Kaiser 2010; Nambisan 2002). For instance, O'Hern and Rindfleisch (2009) classified the possibilities for customer input as ranging from being totally fixed by the firm to totally open to the customer. Although not

exhaustive, the remainder of this section will describe a considerable list of the different activities most frequently mentioned in the literature.

Following Von Hippel (1986, p. 796), “*lead users face needs that will be general in the marketplace – but face them months or years before the bulk of that marketplace encounters them, and lead users are positioned to benefit significantly by obtaining a solution to those needs.*” A lead user’s field of expertise must not be limited to the target market but can also be analog markets (Von Hippel 2005). Since first being introduced, the lead-user method has been extensively studied and further developed (Franke, Von Hippel, and Schreier 2006; Herstatt and Von Hippel 1992; Lüthje and Herstatt 2004; Lüthje, Herstatt, and Von Hippel 2006; Schreier and Prügl 2008). Numerous studies suggest that the integration of a lead user delivers radical and breakthrough innovations (Franke, Von Hippel, and Schreier 2006; Von Hippel 2005; Lettl, Herstatt, and Gemuenden 2006; Lilien et al. 2002; Lüthje and Herstatt 2004). Only recently, Schweisfurth and Raasch (2015, p. 168) found embedded lead users – “*employees who are lead users of their employing firm’s products or services*” – to exhibit highly innovative work behavior.

Firms have also been very active in developing *toolkits for innovation* to absorb information about needs and ideas from customers. Toolkits hold the promise of easier access to sticky customer knowledge by shifting innovation and need-related product-design tasks to the customer. By applying a learning-by-doing approach in online applications, they enable the customer to virtually create and self-develop their own ideas or even complete product concepts (Franke and Piller 2004; Von Hippel 1994; 2005; Von Hippel and Katz 2002). First applied in the field of industrial goods (i.e., semiconductors), toolkits for innovation have also been recently implemented by firms in the field of consumer goods (Franke and Piller 2004; Hienerth, Lettl, and Keinz 2014; Von Hippel 2001; 2005; Jeppesen 2005; Ogawa and Piller 2006; Thomke and Von Hippel 2002). Toolkits for innovation are mostly used in the product design and testing stage of the innovation process. However, the application of the specific mechanism of a toolkit is also common, for instance, in the mass customization of products (Franke, Schreier, and Kaiser 2010; Hienerth, Lettl, and Keinz 2014; Von Hippel 2005; Sawhney, Verona, and Prandelli 2005).

Recently, *idea contests* have become en vogue among firms (Adamczyk, Bullinger, and Möslein 2012; Bretschneider 2009; Ebner, Leimeister, and Krcmar 2009). Firms invite customers to submit ideas and solutions directly related to a certain topic over a fixed period (Bullinger et al. 2010). The participants compete for pre-announced prizes, which vary in structure and amount. In addition, the formats differ in terms of the target group, topic

specificity, and entry barriers (Adamczyk, Bullinger, and Möslein 2012; Bretschneider 2009; Ebner, Leimeister, and Krcmar 2009). For instance, the levels of required skills and expertise range from contests for amateur participants among the general public up to contests for select groups of qualified professionals (Terwiesch and Xu 2008). In 2010 Starbucks used its Betacup (Starbucks Coffee Company 2010) to approach the problem of the huge amount of garbage caused by non-recyclable cups being thrown away by their customers. This contest was announced to the general public and addressed not only their customers but all people interested in sustainability issues (Bayus 2013; Bostwick 2010). Automobile manufacturers like BMW and Audi continuously post idea contests on their own *innovation platforms* or *user innovation communities* hosted within their firms that are addressed to more qualified participants like engineers (Bullinger et al. 2010; Fuller and Matzler 2007). In addition to these firm-hosted activities, a contest can be broadcast on external platforms (e.g., NineSigma) where firms' problems are presented to potential problem solvers (Jeppesen and Lakhani 2010).

The user innovation communities mentioned above are defined by Dahlander (2008, p. 1246) as “*distributed groups of individuals focused on solving a general problem and/or developing a new solution supported by computer mediated communication*”. For firms they create access to a large, volunteer workforce that contributes input and content that can be appropriated by the firms (Franke and Shah 2003; Surowiecki 2005). Community participants often stand out due to their high dedication and expertise (Sawhney, Verona, and Prandelli 2005). Innovation communities can be directly hosted by a firm (e.g., Dell's Ideastorm), but firms can also make use of external special interest communities (e.g., sport communities) (e.g., Bayus 2013; Dahlander and Magnusson 2008; Franke and Shah 2003). Thus, communities can be of a firm-initiated as well as of a customer-initiated nature.

Virtual environments allow customers to experience a new product and its features e.g., (Dahan and Hauser 2002; Fuller and Matzler 2007; Nambisan 2002). In addition to animated product depictions, the use of 3D models and complete usage scenarios in *virtual concept tests* as well as in *virtual product tests* make it possible to test different designs and configurations simultaneously long before the physical product exists (Dahan and Srinivasan 2000; Sawhney, Verona, and Prandelli 2005; Thomke 1998). Evidence shows that results for virtual prototyping can compete with those of physical prototyping (Dahan and Srinivasan 2000) while reducing costs and accelerating product testing (Fuller and Matzler 2007; Thomke 1998). Furthermore, virtual environments enable the testing of different marketing

mixes (i.e., *virtual market testing*) (Dahan and Srinivasan 2000; Sawhney, Verona, and Prandelli 2005).

The activities and tools reviewed so far are mainly of a firm-initiated nature. However, there are also approaches in which firms make use of requests, complaints, ideas, and suggestions submitted by customers that are unsolicited (Alexy, Criscuolo, and Salter 2012; Berthon et al. 2007; Brockhoff 2003; Dahlander and Piezunka 2014). Despite their prevalence and relevance, there is less empirical research on customer-initiated activities than firm-initiated activities. Firms can continuously *screen and make use of complaints and requests* via the common contact channels (e.g., when customers contact the firm by e-mail or telephone) (Alexy, Criscuolo, and Salter 2012; Brockhoff 2003; Ernst 2004; van Doorn et al. 2010). This approach exhibits a very low interaction and integration level e.g., (Prandelli, Verona, and Raccagni 2006). *Suggestion boxes* can be helpful when firms try to encourage customers to submit their own ideas and suggestions independently (Alexy, Criscuolo, and Salter 2012; Dahlander and Piezunka 2014; Ernst 2004; Sawhney, Verona, and Prandelli 2005). Following an exploratory study by Alexy, Criscuolo, and Salter (2012), these approaches may face problems of intellectual property ownership and an unfavorable relationship between quantity and quality of submitted ideas and suggestions. However, since electronic channels have made customer contact easier, the number of spontaneous ideas submitted by customers should have increased in recent years (Afuah and Tucci 2012; Berthon et al. 2007; Hoyer et al. 2010). In a study of the automobile, motorcycle, electronics, toiletries, and food industries, Prandelli, Verona, and Raccagni (2006) found that over 90 percent of the firms observed already offered a “contact the firm” option on their website and an additional 8.1 percent also provided suggestion boxes. In the motorcycle industry, as much as 29 percent of the firms offer their customers suggestion boxes. In the food industry, Ben & Jerry’s, for instance, provides its customers with a special area on the company website with which to suggest a flavor (Ben Jerry's 2014).

### **3. How interested are Firms really in Customers' Innovation Potential? Status Quo and Effects**

#### **3.1. Introduction**

Customers are widely recognized as key informants on existing and emerging needs, as experts with experience in usage, and thus, as valuable contributors to innovative ideas (e.g., (Von Hippel 2005; Kumar et al. 2010; Leiponen and Helfat 2010). In recent years, customer engagement behavior and being open to co-creation with customers have been hot research topics in service and new product development literature (e.g., Hoyer et al. 2010; Jaakkola and Alexander 2014; Kumar et al. 2010; Mahr, Lievens, and Blazevic 2014). Most evidence supports positive effects of integrating customers with their so-called innovation potential in the process of developing new products and services and improving existing products and services (e.g., Eisingerich, Auh, and Merlo 2014; Kristensson, Gustafsson, and Archer 2004; Magnusson 2009). Being open to customer input has also been heavily promoted as one of the new management paradigms by the business press (e.g., Boudreau and Lakhani 2013; Chesbrough 2011; Lampel, Jha, and Bhalla 2012). Management practice seems to follow this trend. Throughout industries, slogans like “*You talk ... We listen*” (Caterpillar Inc. 2012), “*We promise to listen and learn*” (TNT 2012), and “*We listen. You win*” (Dell 2012) underline that customer engagement and especially their ideas and suggestions are highly valued.

In our study, we question whether firms are really that interested in the engagement behavior of customers. In exploring firms' openness to customer input (i.e., their ideas and suggestions), we are particularly interested in actual behavior. Assessing actual behavior should provide a valid indication of whether firms indeed welcome customers' engagement behavior and how professionally their ideas and suggestions are handled (e.g., Dahlander and Gann 2010).

Compared to customers purchase and referral behavior, co-creation and customer input to new product development as a manifestation of customer engagement behavior so far has been neglected by service and customer management literature (e.g., Hoyer et al. 2010; Jaakkola and Alexander 2014; Verhoef, Reinartz, and Krafft 2010). Only in new product development research numerous studies exist that investigated how firms manage customers' innovation potential. However, in the majority of cases, the focus was on firm-initiated contact, where firms explicitly invite ideas mostly through event-related activities, such as lead-user workshops, or idea contests (e.g., Franke, Von Hippel, and Schreier 2006). There is

only sparse documentation, however, of the management of customer-initiated contact, which involves customers contacting firms deliberately and voluntarily to offer novel ideas and suggestions. This research gap is surprising since the majority of firms face such contacts on a regular basis. In addition, the management of customer-initiated contact is likely to be a good indicator of whether openness to customer input is consistently practiced and part of a firm's routine processes (e.g., Boulding et al. 2005), instead of remaining an ad-hoc activity or mere cheap talk.

Although exploratory in nature, the findings of the few available studies in new product development research on customer-initiated contact with innovation potential suggest that firms largely struggle when confronted with such inquiries and tend to handle them inadequately (Alexy, Criscuolo, and Salter 2012; Berthon et al. 2007). While an inadequate handling of customer inquiries in general is likely to negatively affect a firm's image in the market (e.g., Bowman and Narayandas 2001; Davidow 2003; Gelbrich and Roschk 2011), empirical evidence for this effect is still lacking. We thus contribute to service and new product development research by investigating how different types of inadequate firm behavior (i.e., ignoring customer inquiries, rejecting customer inquiries, and handling customer inquiries in an unprofessional manner) influence a firm's image in the market. Uncovering the direction and strength of these relationships will help managers handle customer engagement behavior manifesting in customer-initiated contact with innovation potential in a more appropriate manner.

Overall, this study will tie in with the abovementioned research issues by empirically observing the nature of firms' reactions to customer engagement behavior and the consequences of ignoring, rejecting and handling customers' co-creation efforts unprofessionally. Referring to a sample of 205 business-to-consumer firms, we investigate (1) how firms react when being contacted by customers with an idea or suggestion for a new product or service and (2) to which extent a firm's behavior affects its image in the market.

In the following, we first provide a conceptual framework for customer engagement behavior and customer-initiated contact with innovation potential. Further, we derive our hypotheses based on findings from social psychology, service and customer management literature to investigate the nature and consequences of firm behavior. We outline our research methodology and present the results of group comparisons and regression analysis. Finally, we conclude with the theoretical and managerial implications of this study. In addition, we make suggestions for further research in the field of customer engagement manifesting in co-creation behavior.

## 3.2. Conceptual Framework and Development of Hypotheses

### 3.2.1 The value of customers and their engagement for firms

When describing how firms can benefit from customers and their engagement, the service and customer management literature regularly refers to the concept of customer value contributions. Customers can contribute to firm value both through transactions and through engagement behavior that goes beyond transactions (e.g., Kumar et al. 2010; Lengnick-Hall 1996; Verhoef, Reinartz, and Krafft 2010). A customer's transactions are direct and are closely related to product and firm success. They are related to *customers' sales potential*, both for the initial and future purchases of a product and for cross-selling and up-selling throughout the product portfolio (e.g., Bodapati 2008). Customer engagement behavior has a less immediate, more indirect impact on performance. Van Doorn and colleagues (2010, p. 254) define this behavior "*as a customer's behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers.*" In service literature customer engagement behavior is regularly divided into (1) referral and influencing behavior and (2) co-creation (e.g., Eisingerich, Auh, and Merlo 2014; Jaakkola and Alexander 2014). Referral and influencing behaviors refer to customers engaging in customer-to-customer interaction. Thus, it captures *customers' referral potential* to attract and acquire new customers by recommendations and positive word-of-mouth (e.g., Kumar, Peterson, and Leone 2010). Co-creation describes activities in whose customers actively engage in and contribute to a joint new product development process (e.g., Hoyer et al. 2010, O'Hern and Rindfleisch 2009; Vargo and Lusch 2004). Thus, *customers' innovation potential* includes the information and knowledge potential of existing and new customers (e.g., Kumar et al. 2010; Lengnick-Hall 1996; Walter, Ritter, and Gemünden 2001), i.e., their potential to contribute relevant input to the development of new products and services or the improvement of existing ones (e.g., through providing feedback, ideas, information and suggestions to the firm) (e.g., Hoyer et al. 2010; van Doorn et al. 2010).

In customer management literature numerous studies have researched customer value creation on transactional side of the relationship between customer and firm (e.g., customer lifetime value, CRM systems) (e.g., Bijmolt et al. 2010; Kumar et al. 2010). Despite this focus on customer transactions, the value of customer referral and influencing behavior has been recognized and sufficiently investigated by existent literature (e.g., Eisingerich, Auh, and Merlo 2014; Libai 2011; Verhoef, Reinartz, and Krafft 2010). In addition, there is evidence that firms are widely aware of the positive effect of word-of-mouth on reducing customer

acquisition costs (e.g., Ryu and Feick 2007) and make an effort to manage customer inquiries with referral potential professionally (like questions about a friend's acquisition and reward programs for referrals) (Reinartz, Krafft, and Hoyer 2004; Ryu and Feick 2007). However, compared to transactions, as well as customer referral and influencing behavior, research findings for co-creation and customers' innovation are still limited in customer management and service literature (e.g., Dong et al. 2015; Hoyer et al. 2010; Jaakkola and Alexander 2014; Verhoef, Reinartz, and Krafft 2010). Only recently, research started to empirically investigate the antecedents and outcomes of co-created services (e.g., Dong et al. 2015; Eisingerich, Auh, and Merlo 2014; Jaakkola and Alexander 2014; Xia and Suri 2014). In addition, research started to give managerial advice encouraging and rewarding customer co-creation because of its relational value (Chan, Yim, and Lam 2010; Eisingerich, Auh, and Merlo 2014). Ernst and colleagues (2011) emphasized the positive effects of integrating information related to this customer engagement behavior in a firm's CRM system. However, management practice may have recognized the importance and need of co-creation with customer but is still said to have problems with the implementation of this issue (e.g., Moeller et al. 2013).

### **3.2.2 A firm's openness to customer input**

Our understanding of a firm's openness to customer input is closely related to the concept of co-creation and customers' innovation potential. It captures whether a firm dignifies customers' engagement manifesting in co-creation behavior. In detail, it encompasses how highly a firm values customers as an external knowledge resource and how professionally their input is managed (e.g., Dahlander and Gann 2010; Vargo and Lusch 2004) when knowledge is (to be) co-created (e.g., Nambisan and Baron 2009; O'Hern and Rindfleisch 2010; Vargo and Lusch 2004).

When firms actually open up towards co-creating knowledge with customers, they can either initiate the contact by themselves or make use of ideas and suggestions submitted by customers via existent contact channels (Alexy, Criscuolo, and Salter 2012; Brockhoff 2003; Villarroel Ordenes et al. 2014). Thus, one can distinguish between *firm-initiated contact* and *customer-initiated contact* (Bowman and Narayandas 2001).

Service research concentrated mainly on firms offering customers the possibility to spend their own effort (e.g., in exchange for extra saving) to co-create services (e.g., booking a travel, self check-in, customizing financial services, drying hair on their own at the barber) (e.g., Dong et al. 2015; Xia and Suri 2014). Thus, most research focused on a firm-initiated

configuration offering for services (e.g., Moeller et al. 2013). Prior research in new product development research has indeed investigated the integration of customers in the idea-sourcing phase. However, studies have focused primarily on firm-initiated contact (e.g., Von Hippel 2005). When firms engage in firm-initiated contact, they explicitly invite customers to submit their ideas (e.g., Brockhoff 2003; Füller, Matzler, and Hoppe 2008) via activities that are often event-related and temporary (e.g., Bayus 2013). For instance, firms initiate an idea contest (e.g., Piller and Walcher 2006), broadcast selected problems to potential solvers via innovation platforms (e.g., Jeppesen and Lakhani 2010), or invite lead users to workshops (e.g., Franke, Von Hippel, and Schreier 2006). Most studies found that, when properly managed, these activities can help to discover superior problem solutions that lead to products that outperform their conventionally developed cousins (e.g., Fang, Palmatier, and Evans 2008). However, due to their temporary nature, such activities do not necessarily reflect how open firms are in their routine processes.

Customer-initiated contact means that customers submit ideas on their own initiative (e.g., Bolton 2011; Bowman and Narayandas 2001). Traditionally, firms open their boundaries to such ideas and suggestions by providing different channels customers can engage through: email addresses, telephone numbers, or suggestion boxes on their websites (Alexy, Criscuolo, and Salter 2012; Hoyer et al. 2010; van Doorn et al. 2010; Villarroel Ordenes et al. 2014). As of late, some firms have started to initiate and sponsor user communities (see, e.g., Bayus 2013) where customers can continuously contribute their ideas (Dahlander, Frederiksen, and Rullani 2008). A firm's approach to managing customer-initiated contact is likely to be a good indicator of whether firms indeed consistently practice openness to customer input (Boulding et al. 2005; Bowman and Narayandas 2001; Shields 2006). Since electronic channels have made customer contact easier, several authors argue that the number of spontaneous ideas submitted by customers should have increased over the last years (e.g., Hoyer et al. 2010; Villarroel Ordenes et al. 2014). Despite the relevance of customer-initiated contact, research on how firms deal with spontaneous, unsolicited ideas and suggestions submitted by customers is surprisingly rare.

### **3.2.3 Firms' behavior when being confronted with different type of customer input**

For predicting employees handling of inquiries and thus, firm behavior we turn to psychology and economic literature for references. Evidence indicates that individuals tend to discount distant future payoffs and value them less compared to present or near future payoffs. Thus, they prefer activities that promise a reward on short-term over those promising

rewards in a more distant future (long-term) (Frederick, Loewenstein, and O'Donoghue 2002; Laibson 1997; Loewenstein and Prelec 1992). These choices remain stable even if the distant future pay-offs will be higher (e.g., Ainslie 1975). Discounting is at a certain level associated with the uncertainty of the awaited reward in the future. The higher the uncertainty is (e.g., if a profit can be realized at all, or at what amount) the more individuals will discount this alternative (Dasgupta and Maskin 2005; Sozou 1998). Discounting is also attended with impulsive and impatient behavior and short-term pay-offs strongly provide an immediate reward stimulus (Ainslie 1975; Loewenstein 1996; McClure 2004).

The tendency of humans to be impatient and place less weight on the future than on the present appears also in a reverse effect. They delay costs preferably until later. It becomes apparent that they postpone painful and unpleasant/uncomfortable tasks (O'Donoghue and Rabin 1999).

Comparing different types of customer input transactions promise a direct profit in the near future (Bijmolt et al. 2010; Lengnick-Hall 1996; Verhoef, Reinartz, and Krafft 2010; Walter, Ritter, and Gemünden 2001) and are classified as throughout positive in literature (e.g., Van Doorn et al. 2010). Thus, firms are likely to pay careful attention to, and handle professionally, customer inquiries with sales potential (e.g., questions about product characteristics, product availability, or sales points) (e.g., Payne and Frow 2005) By contrast, customer engagement behavior has a less immediate, more indirect impact on performance (Bijmolt et al. 2010; Kumar et al. 2010; Van Doorn et al. 2010; Van Doorn 2011). Moreover, customer engagement behavior and especially ideas and suggestions submitted by customers exhibit a remarkable amount of uncertainty regarding the possible outcome in the future e.g., (Cooper and Kleinsch 1987). Even though inquiries with referral or innovation potential are positive in first instance (e.g., Bowman and Narayandas 2001; Eisingerich, Auh, and Merlo 2014; Van Doorn et al. 2010) literature still states that customer engagement behavior can also occur in negative forms (e.g., Van Doorn et al. 2010; Van Doorn 2011). In case of inquiries with innovation potential, research refers particularly to the wide range of quality, newness and feasibility of ideas and suggestions arising from customer-initiated contact (e.g., Bayus 2013; Magnusson 2009; Poetz and Schreier 2012). Despite the notion that a customer contact is first of all of positive valence firms may react more cautiously facing a high uncertainty of outcome and inquiries with ideas and suggestion will be valued less.

On individual employee level, an immediate award such as a monetary incentive in case of a customers purchase could increase employees' efforts for an adequate response to an inquiry with sales potential (e.g., McClure 2004). By contrast, the handling of inquiries

with innovation potential can be seen as an unpleasant task for employees. Besides the positive outcomes of co-creation, Chan, Lim, and Lam (2010) found that it also increases employees' job stress. In addition, especially customer-initiated contact with ideas and suggestions is found to be more complex, unclear, and worse structured than for instance purchase inquiries (e.g., Bayus 2013; Dahlander and Piezunka 2014; Hoyer et al. 2010). While employees potentially do not know who to contact within the firm and how to respond in case of submitted ideas and suggestions (e.g., Alexy, Criscuolo, and Salter 2012), the handling of customer inquiries with sales potential is a routine task (e.g., providing catalogues and other sales material, or referring to the next point of sales) (e.g., Boulding et al. 2005; Bowman and Narayandas 2001). Besides, humans discount the later costs more as time grows short. It can be assumed that the unpleasant task will be postponed again and again, or may be even ignored by the single employee to avoid individual present or future costs (O'Donoghue and Rabin 1999).

And indeed, an explorative study by Alexy, Criscuolo, and Salter (2012) implies that firms struggle when confronted with ideas and suggestions submitted by customers via the regular contact channels, even if they are aware of their potential. Thus, many inquiries are likely to be met by inadequate firm behavior (Berthon et al. 2011; Dahlander and Piezunka 2014; Piezunka and Dahlander 2014). This might be even worse in sectors where co-creation with customers mainly appear to be a configuration offering of firms (e.g., services) (e.g., Dong et al. 2015; Xia and Suri 2014).

Following the argumentation above, we expect that firms' response behavior will vary when being confronted with inquiries that promise different customer behavior and different value contributions (Bowman and Narayandas 2001; Smart and Martin 2011). Literature suggests mainly three types of inadequate firm behavior: (1) ignoring customer inquiries, (2) rejecting customer inquiries, and (3) handling customer inquiries in an unprofessional manner (e.g., Davidow 2003; Goodman et al. 1995). In the first case, a firm does not attend to the inquiry so that customers do not receive any response at all (e.g., Clark, Kaminski, and Rink 1992; Davidow 2003; Piezunka and Dahlander 2014). The latter two cases characterize the nature of the firm's response. When a firm chooses to address an inquiry, the response may be encouraging or rejecting (Piezunka and Dahlander 2014). Rejection is understood as a form of denial, which means that the firm expresses its disinterest in a customer's idea or suggestion (Berthon et al. 2007; Payne et al. 2002). When firms respond to customer-initiated contact, the response, be it positive or negative, can be characterized according to its degree of unprofessionalism. Following conceptualizations by Davidow (2003) and Goodman and

colleagues (1995) and drawing on the findings of Gelbrich and Roschk (2011), the construct of professionalism included procedural elements (*response time, length*) and interactional elements (*precision, courtesy*). Thus, an unprofessional response could take long, be unkind, imprecise, and curt.

Inquiries regarding customer engagement, and, especially inquiries with innovation potential will be met more often by inadequate firm behavior (i.e., (1) ignoring customer inquiries, (2) rejecting customer inquiries, and (3) handling customer inquiries in an unprofessional manner) than inquiries that promise customer transactions. Thus, we hypothesize:

- H1: Customer-initiated contact with innovation potential will be...*
- a) ignored most often, followed by customer-initiated contact with referral potential and customer-initiated contact with sales potential.*
  - b) rejected most often, followed by customer-initiated contact with referral potential and customer-initiated contact with sales potential.*
  - c) handled most unprofessionally, followed by customer-initiated contact with referral potential and customer-initiated contact with sales potential.*

### **3.2.4 Consequences of a firm's openness to customer input on its image in the market**

Most literature streams lack evidence on the potential effects of a firm's handling of customer-initiated contact. To predict the effect on a firm's image in the market, we turn to customer management and complaint literature for reference (e.g., Homburg, Fürst, and Koschate 2010). Complaining customers are often said to be committed customers (e.g., Bearden, Malhotra, and Uscátegui 1998; Crie and Ladwein 2002). However, their mood in the contact situation and their attitude towards the firm are likely to be negative since their action is driven by some disappointing experience (Stauss and Seidel 2004). Several studies showed that firms' unprofessional handling of customer complaints can destruct loyalty and decrease customer satisfaction significantly (Gelbrich and Roschk 2011).

Customers who contact firms with an idea or suggestion for a new product or service are also claimed to be highly involved and loyal customers (Füller, Matzler, and Hoppe 2008; Harhoff, Henkel, and Von Hippel 2003; Sashi 2012). In the contact situation, however, their mood is likely to be positive. They act of their own accord and not because they were forced to (Eisingerich, Auh, and Merlo 2014). Customers engage in these elective behaviors mainly to achieve their consumption goals (e.g., improvements in the products or services) (e.g., Van Doorn et al. 2010). Next to this point, literature names financial, technical, social, and psychological factors that motivate customers to engage in co-creation (e.g., Hoyer et al.

2010). While some customers may be motivated by a possible financial reward for their idea (e.g., Kumar et al. 2010) others like to gain technical knowledge and benefit from learning within the co-creation process (e.g., Nambisan 2002). In addition, customer can receive social benefits from recognition (e.g., building reputation among one's peers) (e.g., Kumar et al. 2010; Nambisan and Baron 2009), or participate for psychological reasons (e.g., self-expression, enjoyment of process) (e.g., Von Hippel 2005). Customers who submit an idea are likely to have thoroughly thought about it, are attached to and proud of it, and may long for appreciation and belonging (Franke and Piller 2004; Schreier 2006).

Although the birth of many customer ideas and suggestions may come from dissatisfaction with the present product or service (e.g., Von Hippel 2005), customers who contact firms with an idea are still believed to act out of sympathy for the firm with a positive intention in mind (Füller, Matzler, and Hoppe 2008; Payne et al. 2002). They are likely to believe that the firm is worth their time and effort (e.g., Bettencourt 1997). For such well-meaning customers, the negative effects of a firm's inadequate handling of their inquiry are likely to be even larger. They are likely to be more sensitive to any reaction – be it positive or negative. This notion is supported by the findings of Goodman and colleagues (1995) and Grégoire, Tripp, and Legoux (2009). The authors found that inadequate firm behavior has a particularly negative effect on customer satisfaction in the case of loyal customers. In addition, Bowman and Narayandas (2001) demonstrated that well-meaning customers who are satisfied with how a firm handles their inquiry express more positive feelings and intentions than less well-meaning customers. Overall, the complaint literature shows that a firm's responsiveness to customer inquiries positively influences customer satisfaction in general and the firm's image in the market (e.g., Goodman et al. 1995).

Concerning the three types of inadequate firm behavior, the service as well as innovation literature provide little evidence on the potential effects of these three types of inadequate behavior on a firm's image in the market. Hence, we will also draw on evidence from social psychology to build our expectations.

When firms *ignore* customers' engagement efforts with innovative ideas and suggestions, their behavior can be understood as a passive form of social exclusion since a non-reply indicates a lack of social connection between the firm and the customer (Smith and Williams 2004). Social psychology research showed that this form of social exclusion can trigger negative feelings and aggressive behavior (e.g., Buckley, Winkel, and Leary 2004; Chow, Tiedens, and Govan 2008; Smith and Williams 2004; Warburton, Williams, and Cairns 2006). Gerber and Wheeler (2009), for example, found that subjects who were ignored

by their partners engaged in antisocial behavior to restore their sense of belonging. Ignored subjects also expressed the desire to take revenge and punish and hurt their interaction partners or even others who were not involved at all (e.g., Smith and Williams 2004; Warburton, Williams, and Cairns 2006; Williams, Cheung, and W. Choi 2000). These findings are not limited to face-to-face interaction: being ignored in online chat rooms, internet games (e.g., Williams et al. 2002; Williams, Cheung, and W. Choi 2000), or mobile messaging (Smith and Williams 2004) can lead to similar effects. If firms ignore their customers, they signal disinterest and their refusal to acknowledge their customers' ideas and suggestions. Customers' goals, in particular possible social and financial benefits, as well as the demanded improvements in the products or services, cannot be attained. In addition, the firms' products and services may thus exhibit a lower fit with customers' preferences (e.g., Fang, Palmatier, and Evans 2008). This may give the market the impression that customers' views and efforts are irrelevant to the firm (Molden et al. 2009). In case of interactions between firms and complaining customers, studies showed that the firms' image is negatively affected if they ignore such complaints (e.g., Clark, Kaminski, and Rink 1992; Homburg and Fürst 2007; Mattila et al. 2013). Hence, we hypothesize that a firm's image is affected negatively if the firm ignores customers' engagement manifesting in submitting ideas and suggestions:

*H2: Ignoring customer-initiated contact with innovation potential negatively affects a firm's image in the market.*

When firms respond negatively to customers' ideas and suggestions, customers receive explicit feedback and their engagement efforts are thus actively *rejected* (Molden et al. 2009). Social psychology research implies that rejections can severely affect relationship quality (Canevello and Crocker 2010), cause negative feelings, such as anger, sadness and hurt (e.g., Buckley, Winkel, and Leary 2004; Gerber and Wheeler 2009), or antisocial reactions, such as aggression and impaired self-regulation (Leary, Twenge, and Quinlivan 2006). Several studies have demonstrated that subjects who are rejected by a partner tend to withhold positive rewards from their partners, rate them negatively, or engage in attempts to reduce their social profile (e.g., Buckley, Winkel, and Leary 2004; Maner et al. 2007). Again, customers cannot realize financial benefits and did not achieve their aim of increasing the product's or service's fit with their preferences. Customers may at least benefit from the social interaction with the firm. However, relationship quality is particularly threatened if a rejection is perceived as unfair (Smart Richman and Leary 2009). Most customers who

submit ideas are believed to be well-intentioned and willing to help (Füller, Matzler, and Hoppe 2008; Payne et al. 2002). In addition, they are likely to submit ideas that they have thoroughly thought about and are proud of (Franke and Piller 2004; Schreier 2006). Hence, if firms reject their ideas, this may give rise to perceptions of unfairness, which may spread (e.g., Homburg and Fürst 2005) and threaten the firm's image in the market (e.g., Blodgett and Anderson 2000). For these reasons, we hypothesize that a firm's image is affected negatively if the firm rejects customers' ideas and suggestions:

*H3: Rejecting customer-initiated contact with innovation potential negatively affects a firm's image in the market.*

Complaint research show that an unprofessional handling of customer complaints can destroy loyalty and decrease customer satisfaction (e.g., Gelbrich and Roschk 2011). The courtesy of a reply is reported as one of the key drivers of general customer satisfaction and repurchase intentions (e.g., Blodgett, Hill, and Tax 1997). Moreover, speed and clarity of a response were also found to have a strong relationship with customer satisfaction (e.g., Homburg and Fürst 2005; Smith, Bolton, and Wagner 1999). In a study that investigated the effects of handling customer-initiated contact in general, Bowman and Narayandas (2001) emphasized the importance of these factors for increased loyalty. Since these elements characterize the degree of unprofessionalism of a firm's response to inquires with innovation potential, we hypothesize that a firm's image is affected negatively if the firm handles customer inquiries in an unprofessional manner:

*H4: An unprofessional reply to customer-initiated contact with innovation potential negatively affects a firm's image in the market.*

### **3.3. Research Methodology**

#### **3.3.1 Sample and design**

For our empirical study, we selected 362 firms active in business-to-consumer markets in Germany. To be able to compare firm behavior from different sectors, we considered services (banks, insurances), durables (cars, watches), and fast-moving consumer goods (cosmetics, fashion). In each of these sectors, the selected firms account for more than 90% of the market share of manufacturer brands. To secure variance in the sample, we included firms from the U.S., Asia, and Europe, firms that compete on price and quality, and firms with small and big market shares. Before contacting the firms by fictitious email inquiries, we approached the head of each firm's customer service department and described our research project. To reduce confidentiality concerns, we emphasized that individual firm behavior would not be publicly disclosed, and that our feedback to the firm would not allow conclusions to be drawn about the response behavior of individual employees. A total of 205 firms participated in our study (please see Appendix A for details about sample composition). Over the course of nine months and at irregular intervals, we sent 1,230 email inquiries. Each firm received six inquiries, two with sales potential, two with referral potential, and two with innovation potential. All emails were consistent in structure and content, but customized to the respective industry (see Appendix B for exemplary emails). The emails were sent to the address provided by the firm for customer contact.

#### **3.3.2 Measures**

##### **3.3.2.1 A firm's openness to customer input**

A firm's openness to customer input was assessed by its response behavior to customer-initiated contact with innovation potential. Therefore, we used two measures: (1) the type of response and (2) the degree of unprofessionalism of the responses. The type of response captures whether a firm ignored an inquiry, replied in a rejecting fashion, or in an encouraging manner. A non-response was coded as "*ignoring*." A response that expressed a firm's disinterest in a customer's idea or suggestion was coded as "*rejecting*," and a firm response that signaled interest in the customer's inquiry was coded as "*encouraging*." The degree of unprofessionalism of a response was operationalized as a formative construct, measured on a five-point scale ranging from 1 (very professional) to 5 (very unprofessional). Following conceptualizations by Davidow (2003) and Goodman and colleagues (1995) and drawing on the findings of Gelbrich and Roschk (2011), the construct included procedural

elements (*response time, length*) and interactional elements (*precision, courtesy*). *Response time* was measured in working days passed from the time of the inquiry to firm response; *length* was assessed by the number of words in the response. *Precision* describes how specifically a firm addresses the issues of the inquiry in its response; *courtesy* describes the overall tone and courtesy of the response. While procedural elements are objective measures, interactional elements were evaluated by three independent raters. All items were measured on five-point scales ranging from 1 to 5. To make sure that the raters shared a common understanding of the different item levels, definitions and examples were provided. In case of differences in their initial ratings, the raters reached a consensus in subsequent discussions. Multiple linear regression analyses were run to assess indicator collinearity (Diamantopoulos and Winklhofer 2001). The results support the independence assumption between the indicators of the construct: the variance inflation factors indicate no problems of multicollinearity ( $VIF < 2.2$ ), and the CIs remain below the threshold value of 30 (Belsley 1991; Neter, Wasserman, and Kutner 1989).

### **3.3.2.2 A firm's image in the market**

Data for a firm's image in the market was collected through an online survey (N = 1210, 50.3% female, mean age 39.5). Each participant was asked to rate ten randomly assigned firms. We aggregated single participants' attitudes toward the respective firms. Attitude was measured with two items on a semantic differential with 5-points (*Below you will find pairs of adjectives. Indicate how well one or the other adjective describes how you perceived firm X: good/bad, favorable/unfavorable*) (original items by Osgood, Suci, and Tannenbaum (1957), see also, e.g., Hagtvedt (2011)). To ensure the respondents' familiarity with those firms, they could only provide a rating if they had agreed with an initial screening question (*"Do you know the following firm?"*). The average number of raters per firm was 58. Since inter-rater agreement was very high (AD ranging from .38 to 1.03), a mean score was computed. A Cronbach's  $\alpha$  of .97 indicates scale reliability.

### **3.3.2.3 Controls**

We also controlled for additional variables that might play a role when assessing a firm's openness to customer input. First of all, we considered different sectors and thus, the type of goods produced by the firm. Evidence already indicates firm behavior to differ between firms from different sectors for other concern (e.g., Aragón-Correa 1998; Castellacci 2008). For this purpose, we used dummy variables in accordance with the official

classification of produced goods by Germany's Federal Statistical Office: (1) services, (2) durables, and (3) fast-moving consumer goods (FMCG).

We further controlled for a firm's communicated openness to customer input. Communication research regularly reports discrepancies between how firms communicate their values and how they act on them (e.g., Bernstein 2009; Seiffert, Bentele, and Mende 2011). To assess a firm's communicated openness, we performed a text analysis of each firm's website and annual reports. Based on quantitative and qualitative criteria, firm's individual level of communicated openness was rated on a four-point scale. In the qualitative part, three research assistants performed content analyses of the texts and identified different communication components (e.g., use and prominence of terms, collocations and phrases) that appeared in the texts. Through joint discussions, the raters reached consensus about four categories (*preventing, neutral, addressing, promoting*) and rated the firms respectively (e.g., Kirmani and Campbell 2004; Krippendorff 2004) (see Appendix C for details). In case of differences in their initial ratings, the raters reached a consensus in subsequent discussions. Additionally, quantitative text analyses were performed. Therefore, we developed a dictionary of words consistent with our definition of openness to customer input. Using Concorde Pro 1.0, we counted the number of times these words were mentioned in the text (Krippendorff 2004; Yadav, Prabhu, and Chandy 2007) and then rated firms according to their word usage (see Appendix D for details). A Cronbach's  $\alpha$  of .79 indicates an acceptable scale reliability.

We also controlled for a firm's general response behavior to customer-initiated contact and the general degree of unprofessionalism of a firm's responses to customer-initiated contact. The firm's general response behavior to customer-initiated contact was assessed by the number of times a firm responded to all six email inquiries. The general degree of unprofessionalism was calculated as an average across all responses to all customer inquiries. By including both variables – response behavior and degree of unprofessionalism – in our analyses, we were able to differentiate their effect on a firm's image from the effects caused by a firm's reaction to customer inquiries that contained ideas and suggestions. Finally, we controlled for customers' awareness of the firm. All participants in the online survey had to answer a screening question about their familiarity with each firm before providing their rating. To assess customers' awareness of the firm, all answers provided to the binominal variable were transferred into an index that represents the percentage of all respondents aware of the firm.

Data for the independent, dependent, and control variables were collected from different sources. We used a firm's actual response behavior to assess its openness to customer input and survey data to assess its image in the market. For the control variables, we analyzed websites and corporate reports and used data provided by the Federal Statistical Office of Germany. We can thus alleviate concerns about common source bias. The fact that we have based our analyses on actual response behavior also helps to avoid issues of key informant subjectivity. Finally, there should be little reason for concern about causality issues since each firm's image in the market was assessed in the year following the assessment of its openness to customer input.

### 3.4. Analyses and Results

#### 3.4.1 Descriptive analyses and results

We started our analyses by exploring how firms behave in general when being contacted by customers. We observed that firms ignored 50% of all inquiries. Of the remaining inquiries that received a response, 18% were rejected, while 82% received an encouraging reply. On average, the responses were not particularly professional – the observations are scattered around the center of the scale ( $M = 2.71$ ,  $SD = .71$ ).

To comply with our first research goal, we then put the firms' response behavior into perspective by comparing their reactions to customers' ideas and suggestions with their reactions to other types of customer inquiries (i.e. regarding referral behavior and purchase). In line with H1a, the response behavior was found to differ significantly between the three types of customer inquiries ( $\chi^2(4) = 287.28$ ,  $p < .01$ ). The firms ignored 68% of all inquiries with innovation potential, compared to 55% and 26% of the inquiries with referral and sales potential. Contrary to what hypothesis H1b assumes, our results show that of all inquiries that received a response, inquiries with referral potential were most often rejected (40%), followed by inquiries with innovation potential (25%) and sales potential (3%).

**Table 1.** Firms' Responses to Customer-initiated Contact with Different Customer Potentials<sup>a</sup>

	Type of customer-initiated contact <sup>b</sup>			Significance Tests $\chi^2$
	(1) Sales potential	(2) Referral potential	(3) Innovation potential	
<b>Type of Response</b>				287.28**
Ignoring	.26	.55	.68	
Response	.74	.45	.32	
Rejecting	.02	.18	.08	
Encouraging	.72	.27	.24	
	(N=179 firms) Mean (Mdn, SD)	(N=125 firms) Mean (Mdn, SD)	(N=94 firms) Mean (Mdn, SD)	<i>H</i>
<b>Unprofessionalism:</b>				
Response time	2.59 (2.75, 0.65)	2.80 (2.75, 0.72)	2.81 (2.81, 0.08)	6.85*
Length	2.07 (2.00, 1.29)	2.67 (2.00, 1.45)	2.87 (2.50, 1.48)	26.37**
Precision	3.25 (4.00, 1.59)	3.26 (4.00, 1.49)	3.04 (3.00, 1.54)	1.41
Courtesy	2.47 (2.50, 0.73)	2.60 (2.50, 0.75)	2.68 (2.50, 0.96)	1.94
	2.58 (3.00, 0.77)	2.69 (3.00, 1.07)	2.66 (3.00, 0.12)	0.60

<sup>a</sup> Significant differences between the value contributions are observed for: type of response (1) – (2)\*\*, (1) – (3)\*\*, (2) – (3)\*\*; unprofessionalism (1) – (2)\*, (1) – (3)\*; response time (1) – (2)\*\*, (1) – (3)\*\*; precision (1) – (3)†

<sup>b</sup> N=410 emails each group.

†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

We then investigated whether the unprofessionalism of the responses differed between the customer inquiries. In line with H1c, the unprofessionalism of the response was found to vary significantly with the type of customer inquiry ( $(2) = 6.85, p < .05$ ). As expected, firms respond more unprofessionally to inquiries with innovation potential ( $M = 2.81, Mdn = 2.81, SD = .76$ ) than to inquiries with referral potential ( $M = 2.80, Mdn = 2.75, SD = .72$ ) and sales potential ( $M = 2.59, Mdn = 2.75, SD = .65$ , Mann-Whitney test:  $p < .05$ ). At the item level, we observed that the response time to inquiries with sales potential was significantly shorter ( $M = 2.07, Mdn = 2.00, SD = 1.29$ ) than to inquiries with referral potential ( $M = 2.67, Mdn = 2.00, SD = 1.45$ , Mann-Whitney test:  $p < .01$ ) and innovation potential ( $M = 2.87, Mdn = 2.50, SD = 1.48$ , Mann-Whitney test:  $p < .01$ ) ( $(2) = 26.37, p < .01$ ). Firms also replied more imprecisely to inquiries with innovation potential ( $M = 2.68, Mdn = 2.50, SD = .96$ ) than to inquiries with sales potential ( $M = 2.47, Mdn = 2.50, SD = .73$ , Mann-Whitney test:  $p < .10$ ) ( $(2) = 1.94, p > .05$ ). Neither the degree of courtesy nor the length of the response varied significantly with the type of inquiry. Table 1 summarizes the results of the group comparisons. Overall and in line with our expectations, it seems that firms' response behavior is rather inadequate when it comes to customer-initiated contact with innovation potential.

**Table 2.** Firms' Responses to Inquiries with Innovation Potential in different Sectors<sup>a</sup>

	Services	Durables	FMCG	Significance Tests $\chi^2$
<b>Type of Response</b>				11.57*
Ignoring	.70	.58	.74	
Response	.30	.42	.26	
Rejecting	.06	.14	.05	
Encouraging	.24	.28	.21	
	Mean (Mdn, SD)	Mean (Mdn, SD)	Mean (Mdn, SD)	<i>H</i>
<b>Unprofessionalism<sup>b</sup></b>	3.11 (3.25, 0.69)	2.57 (2.50, 0.76)	2.74 (2.75, 0.75)	8.76*

<sup>a</sup> N=410 emails

<sup>b</sup> Services: N=34 firms; durables: N=33 firms; FMCG: N=27 firms

Significant differences between the different sectors are observed for: type of response (1) – (2)\*, (2) – (3)\*\*; unprofessionalism (1) – (2)\*\*, (1) – (3)†

†  $p < .10$ , \* $p < .05$ , \*\* $p < .01$

When investigating differences across sectors for inquiries with innovation potential, we see a significant effect on the type of response ( $\chi^2(4) = 11.57, p < .05$ ). While the rate for ignoring customer-initiated contact with innovation potential is moderate in the sector of durables (58%) service (70%) and FMCG firms exhibit very high rates (74%). Also the unprofessionalism of the response was found to vary significantly between the different

sectors ( $t(2) = 8.76, p < .05$ ). Service firms respond more unprofessionally to inquiries with innovation potential ( $M = 3.11, Mdn = 3.25, SD = .69$ ) than firms that produce FMCG ( $M = 2.74, Mdn = 2.75, SD = .75$ , Mann-Whitney test:  $p < .10$ ) and firms that produce durables ( $M = 2.57, Mdn = 2.50, SD = .76$ , Mann-Whitney test:  $p < .01$ ). Table 2 provides an overview of further descriptive results for each industry.

In a next step, we examined whether firms' openness to customer input is indeed different from their communicated openness. We found that communicated openness is neither significantly correlated with the type of response ( $r = .10, p > .05$ ), nor with the unprofessionalism of the response ( $r = -.17, p > .05$ ). Firms' actual reactions to customers' ideas and suggestions thus seem to be inconsistent with their communicated openness. To better understand these inconsistencies, we explored how firms' response behavior differs between the four levels of communicated openness (see Appendix F for more detailed results). We found that firms that promote such openness – we speak of “*promoting firms*” – present themselves as very open to the public and act accordingly, which means that they most often respond in an encouraging fashion and handle inquiries most professionally. For the other three levels, we observed discrepancies between firms' communicated and actual openness. For example, firms that seek to prevent customer input, which we refer to as “*preventing firms*,” disregard, discourage, or refuse customer contact in their public communication, but handle customer-initiated contact rather professionally. Firms that address issues of customer contact on a positive note – “*addressing firms*” in our terminology – communicate their openness quite extensively, but react rather poorly to customer ideas and suggestions.

### **3.4.2 Multivariate regression analyses and results**

To assess the impact of a firm's actual openness on its image in the market, multiple least squares regression analyses were performed. We estimated two separate regression models. The first model (M1) included the entire sample of firms ( $N = 205$ ). In M1 we tested how the type of firm response to customers' ideas and suggestions (i.e., ignoring, rejecting, or encouraging) affected the firm's image in the market (H2 and H3). The unprofessionalism of the response could be assessed only for those firms that responded to the inquiries with innovation potential. Since the type of response and the unprofessionalism of the response are not independent of each other, we had to assess their effects separately. Hence, we estimated a second model (M2) with a reduced sample of firms ( $N = 94$ ) to test hypothesis H4. In both models, we included the firms' communicated openness and their general response behavior

to customer-initiated contact, the type of goods produced by the firm, and customers' awareness of the firm as control variables. In M2, we additionally controlled for the general unprofessionalism of the firms' responses to customer-initiated contact.

The estimation results show that M1 is significant ( $F_{MI} = 22.17$ ) and explains 37% of the variance of a firm's image in the market (see Table 3). The omitted category for "type of response" is "encouraging." Compared to this response type, we found that ignoring customer inquiries with innovation potential has a significant negative effect ( $\beta_2 = -.095, p < .05$ ). Thus, H2 is supported. In line with H3, we also found a significant negative effect of rejecting customer inquiries with innovation potential ( $\beta_3 = -.101, p < .05$ ). Interestingly, we found no significant effect of communicated openness ( $\beta_4 = .005, p > .05$ ) and firms' general response behavior to customer-initiated contact ( $\beta_5 = .011, p > .05$ ). Our results show a significant positive effect ( $\beta_6 = .279, p < .01$ ) when controlling for customers' awareness of the firm. The type of goods produced by the firms also affects the firm's image significantly. Compared to the sector service, we found significant positive effects on a firm's image in the market for FMCG and durables (durables:  $\beta_8 = .265$ ; FMCG:  $\beta_9 = .337, p < .01$ , the omitted category is "services").

**Table 3.** Estimation Results of Model 1<sup>a</sup>

Variables	Estimates
Constant	2.655**
Type of response	
Ignoring	-.095*
Rejecting	-.101*
Communicated openness	-.005
General response behavior	.011
Customers' awareness of the firm	.279**
Type of goods produced by the firm	
Durables	.265**
FMCG	.337**

<sup>a</sup>  $N = 205$ , dependent variable: Firm's image in the market;  $F = 22.17, R^2 = .37$ ; model estimated with robust standard errors  
\*  $p < .05$ , \*\*  $p < .01$

To check the robustness of our results, we reran the regression analysis with another dependent variable. We used customers' ownership of a firm's products as a proxy for how customers behave towards a firm. Data for this variable was also collected by means of our

online survey. For each firm, the respondents had to indicate whether any of its products were currently in their possession. The answers provided to this binominal variable were transferred into an index that represents the percentage of all respondents owning a firm's products. We adjusted the sample size ( $N = 185$ ) to prevent potential biases caused by the limited ownership of luxury goods, such as Ferrari cars or Glashütte watches. We were still able to replicate the results of M1.

We then estimated the second regression model. The results show that M2 is significant ( $F_{M2} = 14.08, p < .01$ ) and explains 45% of the variance of customers' perception of the firms (see Table 4). In line with the results of M1, the effect of rejecting customer inquiries with innovation potential is negative compared with the omitted category "encouraging" ( $\beta_2 = -.098, p < .10$ ). As expected, we found that unprofessionalism negatively affects a firm's image in the market ( $\beta_3 = -.115, p < .01$ ). Thus, H3 is supported. For the additional control variable "general unprofessionalism of firm responses to customer-initiated contact," we found no significant effect ( $\beta_5 = .031, p > .05$ ). For all other variables, the estimated coefficients are similar to M1, which lends further support to the robustness of our results.

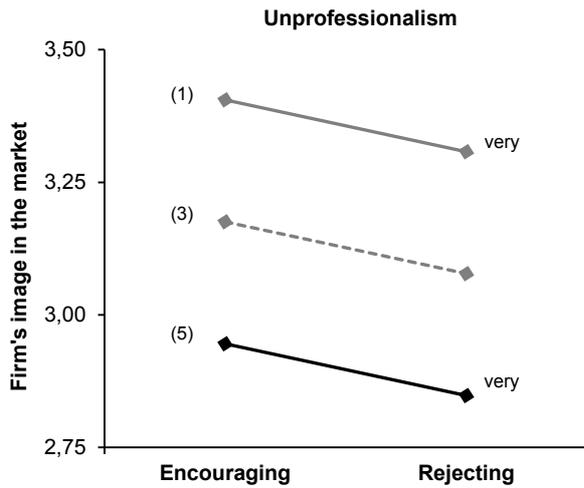
**Table 4.** Estimation Results of Model 2<sup>a</sup>

Variables	Estimates
Constant	3.184**
Type of response	
Rejecting	-.098 <sup>†</sup>
Unprofessionalism of the response	-.115**
Communicated openness	-.043
General response behavior	.008
General unprofessionalism	-.031
Customers' awareness of the firm	.268*
Type of goods produced by the firm	
Durables	.271**
FMCG	.341**

<sup>a</sup>  $N = 94$ , dependent variable: Firm's image in the market;  
 $F = 14.08, R^2 = .45$ ; model estimated with robust standard errors  
<sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

We also tested a possible interaction of the type and unprofessionalism of the firm response but did not find a significant effect. However, direct effects remain stable with and without the interaction. Since the results of M2 still indicate that the effect size of the construct of "unprofessionalism of the response" exceeds that of the "rejecting response", we

investigated whether the impact of a high degree of professionalism can counterbalance a rejection's negative impact on customers' perception of the firm. Hence, we estimated five different scenarios that combine encouraging and rejecting replies with three different levels of unprofessionalism. As illustrated in Figure 1, we can show that due to sizes of the direct effects a rejecting but professional response is always superior to an encouraging but unprofessional one.



**Figure 1.** Estimates of different scenarios<sup>a</sup>

<sup>a</sup> Dependent variable: Firm's image in the market; estimation with all other variables fixed at their means and the variable good at category FMCG

### 3.5. Discussion

The main goal of our study was to shed light on the nature and the effects of firms' actual openness to customer input as form of customer engagement behavior. Hence, we started by examining how firms behave when being contacted by customers with an idea or suggestion for a new product or service. To put firms' response behavior into perspective, we also observed their reactions to other types of inquiries related transactional and non-transactional behavior of customers. As expected, we found that firms ignored inquiries with innovation potential more often (68%) than inquiries with referral and influencing (55%) and sales potential (26%). Moreover, 25% of those firms that responded to inquiries with innovation potential expressed their disinterest in the ideas submitted by customers. Our observations also suggest that the responses lack professionalism since firms replied for instance, less timely and precisely to this type of customer inquiry. Innovation literature argues that evaluating ideas and suggestions submitted by customer should take firms some time especially when ideas are technically complex (e.g., Cooper and Kleinsch 1987; Hammedi, van Riel, and Sasovova 2011). Thus, responding to the customer might take a longer period of time. However, since the content of the inquiries in this study was rather simple and did not include a concrete idea (please see Appendix B) there was no a need for a long evaluation and responses could have been timelier.

Observing only inquiries with innovation potential we found that services (70%) and FMCG firms (74%) tend to ignore more often customers' engagement (i.e., their ideas and suggestions) than firms those produce durables (58%). Also responses from service firms lack professionalism compared to other sectors.

Ideas received via the regular customer contact channels thus are widely handled inadequately. While some firms may disregard such inquiries because they are unaware of their potential, other firms may have took a negative stance on customer ideas and made a deliberate decision not to bother with such inquiries (i.e., actively reject or more passively ignore customer ideas) (e.g., Berthon et al. 2011; 2007). A decision of this kind may be based on reservations against customer-initiated contact since customer ideas are likely to vary considerably in quality, originality, and fit to firm strategy, or to involve intricate intellectual property and copyright issues (Alexy, Criscuolo, and Salter 2012; Brockhoff 2003; Drechsler and Natter 2012; Villarroel Ordenes et al. 2014). Prior research suggested that, in most cases, an inadequate handling of customer-initiated contact tends to point to internal firm issues. Alexy, Criscuolo, and Salter (2012), for instance, reported that many firms feel flooded or even overwhelmed by customer suggestions. Most firms seem to lack clear responsibilities

between departments and established processes to systematically screen, evaluate, and select the best ideas (Boulding et al. 2005; Hoyer et al. 2010) and integrate them into their innovation process (Bolton 2011; Poetz and Schreier 2012). Subsequently employees may perceive the handling of inquiries with idea and suggestions as an unpleasant and stressful task that is ignored, postponed, or done without due care. Hence, it often seems to be a matter of mere chance whether and how professionally a firm responds to ideas received via the regular customer contact channels. Dahlander and Piezunka (2014) proposed that it might require positive experience with spontaneous, unsolicited customer ideas before firms are willing to allocate resources for the management of such ideas and thus, also ease this task for their employees.

We also observed that firms' actual openness to customer input is not consistent with their communicated openness. While many firms present themselves as open in their public communication, several firms appeared keen on preventing customer-initiated contact. One might expect that preventing firms, in particular, ignore unsolicited ideas or handle them inadequately (e.g., Braun and Herstatt 2008). Yet, several firms were found to handle these inquiries rather professionally. These discrepancies may partly be explained by the findings of Alexy, Criscuolo, and Salter (2012) and Dahlander and Piezunka (2014). Firms regularly seem to feel overwhelmed by the great number of customer inquiries submitted via multiple contact points. In addition, we did not find a significant effect of communicated openness on a firm's image in the market. This may be due to the increasing number of enlightened, well-informed customers of today, who are getting more and more immune when being confronted with corporate communication content (Schlegelmilch and Pollach 2005). Several authors argue that customers tend to question firms' communication strategies and seek for consistency with actual firm behavior (e.g., Parguel, Benoît-Moreau, and Larceneux 2011). Thus, if the level of communicated openness doesn't match their own experience of actual firm behavior or prior beliefs, they may evaluate the content as mere cheap talk.

We then investigated the relationship between a firm's openness to customer input and its image in the market. The results of the regression analyses support our assumption that an inadequate handling of customer-initiated contact can severely damage a firm's image in the market. Ignoring customers and rejecting their ideas both have a significant negative effect on the firm's image. This finding seems to be in line with findings from social psychology research, which suggests that relationship quality is damaged when individuals are ignored or rejected by a partner (e.g., Maner et al. 2007; Twenge et al. 2001).

The results also confirm our assumption that unprofessional responses to customer ideas negatively affect a firm's image. Since the effect exceeds the effect size of the other two variables, an unprofessional response behavior seems to be particularly negative for a firm's image. Thus, firms should respond timely, precisely and with courtesy on this type of customer engagement behavior. Several firms were found to have taken measures to influence the number, type, and format of submitted ideas (e.g., by only providing online textboxes for submissions), which makes customer-initiated contact with innovation potential a less complex topic, and internal handling easier (e.g., Alexy, Criscuolo, and Salter 2012). Hence, for some firms, taking an adverse stance toward public input may be an attempt to prevent a tide of customer suggestions, despite having a general interest in customers' engagement and their innovation potential.

When combining encouraging and rejecting responses with three different values of unprofessionalism, we find that the degree of professionalism can act as a counterbalance: whether a firm's response is encouraging or rejecting does seem to matter when it is professional. Our finding complements the results by Smart Richman and Leary (2009), who found that subjects were better able to cope with rejection when it was perceived to be fair. This seems to be similar for professional responses.

Several authors indicated that proactive and professional firms manage and facilitate co-creation efforts of customers by providing platforms for information exchange and interaction with the firm and other customers (e.g., Bayus 2013; Dholakia et al. 2009; Sawhney, Verona, and Prandelli 2005). Villarroel Ordenens and colleagues (2014) introduced an approach to analyze customer feedback using text mining techniques. This approach can be used for high volumes of unstructured textual data resulting from, for instance, e-mail inquiries, online reviews, and customer conversations on platforms. It enables firms to timely assess customers' feedback about product and service experience.

In addition, customers interested in interaction with the firm can be invited to customer get-together or encouraged for online customer trainings (e.g., Hibbert, Winklhofer, and Temerak 2012). Van Doorn and colleagues (2010) emphasized that firms like Apple and Google explicitly manage and control customer engagement behavior through product tests and contact during conferences and special customer events. This may ease tasks for frontline employees, as there are clear routines and contacts they can refer to. Thus, even when the firm has to reject a customer's purpose of an improved product a professional rejection may still increase the relationship value for the involved, committed and loyal customer (e.g., Chan, Yim, and Lam 2010; Sashi 2012).

Hence, from a managerial perspective, our results suggest that professional routines should be established to make sure that reaction to customer initiated contact with innovation potential is appropriate. Without systems that effectively screen, evaluate, and manage ideas and suggestions submitted by customers, firms may miss out on promising ideas (e.g., Hoyer et al. 2010; Poetz and Schreier 2012). Without professional responses, firms will also severely damage their image and reputation in the market.

### **3.6. Limitations and Suggestions for Future Research**

Our study has several limitations that offer future research opportunities. Our analyses are based on firms from business-to-consumer industries. In these firms, the notion of being open to customer input might be quite different from what might be observed, for instance, in business-to-business and smaller firms (e.g., Di Benedetto 2010). It has been suggested that contract manufacturers, in particular, handle customer inquiries with great care (Coviello, Brodie, and Munro 2000). Since being responsive to their customers is inherent to these firms' core business, they may not explicitly use such arguments in their public communication, but may actually be more professional in handling ideas and suggestions submitted by customers. However, the professional handling of customer contact may have a smaller impact on the firm's image in these cases because the customers of such manufacturers are likely to be used to a higher level of attention (La, Patterson, and Styles 2008). It thus would seem interesting to examine how a firm's actual and communicated openness affects the firm's image in other industries.

The first goal of our study was to explore how firms respond to customer-initiated contact with innovation potential as one type of customer engagement behavior. Thus, we focused on ideas and suggestions submitted by email and thus on co-creation in idea searching (e.g., Van Doorn et al. 2010). Future research might expand on our findings by explicitly incorporating negative forms of customer engagement and thus, investigating a broader comprehension of customer engagement behavior (e.g., Van Doorn 2011). Moreover, research could focus on other forms of co-creation activities and options (e.g., in later phases of the new product development process) (e.g., Hoyer et al. 2010). For instance, service firms often offer forms of co-creation where a part of the service could be performed by either by the customer or the service provider (e.g., Xia and Suri 2014).

To be able to compare actual firm reactions based on a representative sample, we used an approach employing standardized email inquiries. Since we were only interested in the initial firm response, we did not follow up on encouraging responses. Hence, we cannot draw any conclusions on how firms handle the next steps of working with customer ideas and suggestions. It might be an interesting avenue for future research to focus on these next steps and provide insights into roles, responsibilities, and processes within firms (e.g., Brodie and Hollebeek 2011; van Doorn 2011).

In addition, we were interested in contrasting firm reactions to customer inquiries with different potential. Thus, the comparability of the different inquiries was an essential requirement on our study. While our approach allowed us to detect different response

patterns, future research might expand on our findings by focusing solely on customer inquiries with innovation potential. Dahlander and Piezunka (2014) suggested that ideas and suggestions are likely to differ, for example, concerning their content (i.e., product- vs. process-related suggestions), their complexity, or their fit with a firm's strategy and resource endowments. Moreover, in our email enquiries we could not mention concrete ideas and suggestions. However, the quality of submitted idea, as well as the level of innovativeness is also likely to be of relevance (O'Connor and DeMartino 2006; Poetz and Schreier 2012). Such differences may provoke different firm reactions. For example, firms may tend to react more cautiously if customers suggest revolutionizing products or services instead of just improving the existing ones (e.g., Keinz, Hienerth, and Lettl 2012; Magnusson 2009). In experimental designs, the quality, newness and feasibility of ideas and suggestions (or other factors mentioned above) could be manipulated to investigate whether professional firms indeed only reject ideas of low quality.

Our study intended to provide initial evidence on how firms manage customers' innovation potential and how different types of inadequate management of customer input can affect a firm's image in the market. The nature of our investigation required that we consider actual firm reactions. For future research, however, it might be interesting to switch from a market to a customer perspective and to observe individual reaction patterns to being ignored, rejected, or addressed in an unprofessional manner. In experimental designs, customers could be confronted with different types of negative firm responses. Social psychology literature implies that individuals exhibit particularly negative reactions when being ignored by others (e.g., Van Beest and Williams 2006; Williams 2001; Williams and Nida 2009). However, there are also studies that showed that subjects react very aggressively when others express their disinterest in them or their ideas (Belschak and Hartog 2009; Twenge et al. 2001). Since no comparative studies have been conducted so far, it should be interesting to explore which individual reactions are provoked by different types of firm feedback to customer ideas.

It would also be interesting to uncover which psychological processes are responsible for customers' negative reactions. Findings by Franke, Keinz, and Klausberger (2013) and Smart Richman, and Leary (2009), for instance, imply that the perceived unfairness of being ignored or rejected may influence negative reactions. Customers' pride of authorship and the perceived psychological ownership of their contribution (e.g., Franke, Schreier, and Kaiser 2010) may also play a role in explaining customers' negative responses to being ignored, rejected, or addressed in an unprofessional manner. Since firms will be neither willing nor

able to work with every customer idea, they can be expected to benefit from such investigations. A better understanding of the psychological processes that explain negative customer reactions will help in developing guidelines of how to respond in a constructive fashion to customers interested in collaboration.

### 3.7. Appendix

#### Appendix A. Sample Composition

Industry		Country of Origin		Market share (MS)		Strategic Focus	
Durables	28.3 %	Austria	1.0 %	MS < 1 %	49.7 %	Quality	56.1 %
Automobil.	14.6 %	China	.5 %	1 % ≤ MS < 5%	35.1 %	Price	30.7 %
Watches	13.7 %	France	7.3 %	5 % ≤ MS < 10%	9.3 %	Hybrid	13.2 %
		Germany	57.1 %	10 % ≤ MS	5.9 %		
FMCG	37.1 %	India	1.0 %				
Fashion	24.9 %	Italy	5.9 %				
Cosmetics	12.2 %	Japan	5.4 %				
		Netherlands	1.0 %				
Services	34.6 %	South Korea	1.0 %				
Banks	11.2 %	Spain	.5 %				
Insurances	23.4 %	Sweden	1.5 %				
		Switzerland	9.3 %				
		Czech Republic	.5 %				
		UK	1.5 %				
		USA	6.8 %				

#### Appendix B. Exemplary Emails with different Potentials (Banks)

##### Sales Potential

Hello,

Currently I am a customer of one of your competitors, but I am thinking of switching my accounts to your institute. However, I am somewhat undecided and would like to request more information material for your services (preferably by email). I am especially interested in your terms and conditions for giro-accounts and investment portfolios.

Looking forward to an answer,

##### Referral Potential

Hello,

I am really interested in bank products would consider myself as an expert in banking services. My friends and colleagues have asked often for my recommendation regarding your service offers. As a result I could already refer several new customers to your firm. Is there is any platform to interact with other customers or prospects? If not, is there something near it already in planning?

Looking forward to an answer,

##### Innovation Potential

Hello,

I am really interested in bank products and just had an idea how to improve one of your offers. Is there anyone in your company I can contact with my idea? And if there is, what is the further process? Please understand that I am keeping this first email very general.

Looking forward to an answer,

## Appendix C. Qualitative Analysis of Communicated Openness<sup>a</sup>

Category	Definition	Examples
(1) Preventing	Customer-initiated contact with innovation potential is explicitly declined or refused	<i>"Consequently, you are advised that X is not interested in receiving ideas or other proposals."</i> <i>"Please do not send us material, especially no proposals, concepts, know-how, ideas and similar suggestions."</i>
(2) Neutral	Customer-initiated contact with innovation potential is not explicitly mentioned or addressed in a neutral tone	<i>"Do you have questions about our products order or need assistance?"</i> <i>"For questions or document requests, please visit our website, email or call."</i>
(3) Addressing	Customer-initiated contact with innovation potential is explicitly mentioned and/or addressed in a positive tone	<i>"Do you have an idea, a suggestions, or just a comment: We'd like to hear from you!"</i> <i>"We will endeavor to answer your questions as quickly as possible and consider your suggestions."</i>
(4) Promoting	Customer-initiated contact with innovation potential is explicitly encouraged and/or the handling of ideas and suggestions is promoted	<i>"We need to find good ideas wherever they are, and for that, we strive for being truly open to the outside."</i> <i>"Feedback is invaluable and X encourages consumers to express their views. The comments we receive back are the very source of our inspiration and they enable us to develop and update formulas and products to more effectively meet consumer needs."</i>

<sup>a</sup>We analyzed the text material of firms' annual reports and websites following a constant comparative technique (Strauss and Corbin 1998). First, we read the texts and noted specific themes in the data. Based on an open coding scheme, different communication components (e.g., use and prominence of terms, collocations and phrases) that appeared in the texts were identified. Common patterns and connections between the first set of coding were identified in an iterative and independent process (e.g., conveying similar/related messages). During this process, studies by e.g., Hoyer and colleagues (2010) and Dahlander and Gann (2010), were used to define different levels of openness. Through joint discussions, the raters reached consensus about four categories. It was ensured that each category appeared in the data repeatedly to achieve concept saturation (Kirmani and Campbell 2004).

## Appendix D.

### Dictionary for Automated Coding Text Analysis<sup>a</sup>

Frequency of words		
Open innovation <sup>b</sup>	Customer...	Openness
User innovation <sup>b</sup>	idea/s <sup>b</sup>	open
Innovation...	input <sup>b</sup>	Integration/s
network/s <sup>b</sup>	dialog/s <sup>b</sup>	to integrate
platform/s <sup>b</sup>	suggestion/s <sup>b</sup>	Cooperation/s
community(ies) <sup>b</sup>	proposal/s <sup>b</sup>	to cooperate
partner/s <sup>b</sup>	Consumer...	Collaboration/s
partnership/s <sup>b</sup>	idea/s <sup>b</sup>	to collaborate
competition/s <sup>b</sup>	input <sup>b</sup>	Interaction/s
contest/s <sup>b</sup>	dialog/s <sup>b</sup>	to interact
pioneer/s <sup>b</sup>	suggestion/s <sup>b</sup>	Customization/s
Lead User/s <sup>b</sup>	proposal/s <sup>b</sup>	to customize
Idea...	External...	Participation
competition/s <sup>b</sup>	idea/s <sup>b</sup>	to participate
contest/s <sup>b</sup>	input <sup>b</sup>	Request/s
Tool kit/s	dialog/s <sup>b</sup>	to request
Virtual Lab/s <sup>b</sup>	suggestion/s <sup>b</sup>	Co-Creation
	proposal/s <sup>b</sup>	to co-create

<sup>a</sup>To control for different lengths and sizes of the texts, relative measures were calculated.

<sup>b</sup>The key words must appear together in the sentence or within four words of each other.

## **4. Thanks, but No, Thanks! The Pitfalls of Inviting Customers to Co-Create with Firms**

### **4.1. Introduction**

When developing new products, firms increasingly seek to integrate the knowledge of consumers by engaging in co-creation activities, such as idea contests or firm-hosted communities (e.g., Mahr, Lievens, and Blazevic 2014; Poetz and Schreier 2012). Existing research on co-creation activities has mainly addressed positive outcomes, both for the firm (e.g., decreased development costs, increased product performance) (e.g., Fang, Palmatier, and Evans 2008; Franke, Keinz, and Steger 2009; Nishikawa, Schreier, and Ogawa 2013) and for consumers (e.g., enjoyment, learning effects, relational approval by a firm) (e.g., Chan, Yim, and Lam 2010; Franke and Schreier 2010).

Since firms are neither able nor willing to work with every idea they get, the question emerges what happens if an idea submitted by a consumer is undesired and thus, will be ignored or rejected (e.g., Eisingerich, Auh, and Merlo 2014; Hoyer et al. 2010). Indeed, in the online idea community of Starbucks, a disappointed customer recently critically noted: *“It would be great if comments and questions were ‘answered’ instead of ignored. That looks so bad and indifferent.”* (Starbucks Coffee Company 2013). Firms might face the problem that many ideas and suggestions are received, but the attention capacity is limited (Piezunka and Dahlander 2014). In addition, ideas submitted by consumers vary often widely in quality, newness and feasibility, or simple do not match firms’ expectations (e.g., Bayus 2013; Dahlander and Piezunka 2014; Hoyer et al. 2010; Piezunka and Dahlander 2014).

Anecdotal evidence and preliminary research results imply that some participants of co-creation activities are disappointed and unhappy after the event (e.g., Breithut 2011; Gebauer, Füller, and Pezzeri 2013). For instance, in 2011, Henkel initiated a design contest for new bottle labels of their dishwashing liquid brand Pril (Henkel 2012). When the most popular designs did not match Henkel’s expectations, they changed rules and shifted selection power from the community back to a firm-controlled jury. Participating consumers were very dissatisfied with the procedure and the outcome of the jury decision. Even participants, who had been loyal and committed customers, engaged in negative word-of-mouth (WoM) and protested against Henkel (Breithut 2011). Gebauer and colleagues (2012) found similar behavior in a field study regarding consumers’ co-creation experience in a design contest.

So far, negative consequences, which may result from dismissing consumer ideas, have not been systematically researched (e.g., Eisingerich, Auh, and Merlo 2014; Hoyer et al.

2010). However, a better understanding of these issues is crucial for firms that are willing to integrate consumers as knowledge source in their innovation processes – without leaving them behind disappointed and unsatisfied.

In the present article we contribute to co-creation literature by uncovering how consumers react when firms ignore or reject their idea in co-creation activities. We also aim at uncovering which psychological processes drive their reactions.

Social psychology research suggests that being ignored and being rejected can negatively affect attitudes and cause aggressive behavior (e.g., Twenge et al. 2001). However, there may be differences: when being ignored, individuals seem to react more negatively (e.g., Molden et al. 2009). We thus investigate whether these two response types affect consumers' attitude toward a firm and their negative word-of-mouth (WoM) intention and behavior in a different manner.

Social psychology research also suggests that differences may be explained by emotions evoked by the response (e.g., Chow, Tiedens, and Govan 2008). Anger in particular has been found to trigger aggressive behavior, such as spreading negative WoM (e.g., Bonifield and Cole 2007; Bougie, Pieters, and Zeelenberg 2003; Chow, Tiedens, and Govan 2008). Hence, we test whether anger mediates the relationships. Studies by Choi and Mattila (2008) and Hess, Ganesan, and Klein (2003) indicate that cognitions may affect the strength of the reaction. Especially consumers' expectations of firms' professionalism in managing their business processes were found to influence consumers' attribution process when they have a negative experience (e.g., Boulding et al. 1993; Oliver 1980; Zeithaml and Berry 1993). Hence, we also investigate whether consumers' expectations of the firm's professionalism in conducting co-creation activities play a moderating role.

We use an experimental study to analyze (1) whether consumers' attitude decreases due to negative experiences in co-creation activities, (2) whether different firm responses to submitted ideas lead to different levels of decrease in consumers' attitude and intentions for negative word-of-mouth (WoM), and (3) whether consumers' anger mediates, and (4) consumers' expectations moderate the effects. Based on these findings, we can derive implications how firms should proceed when they lack interest in an idea, in order to avoid negative consumer reactions.

In the following, we first review the literature on co-creation activities and discuss potential issues when firms interact with consumers. Based on a review of the social psychology literature on social exclusion of individuals, we then derive hypotheses on potential effects of rejecting and ignoring consumers' ideas and on moderating and mediating

factors. After presenting the results of an experimental study we conclude with implications for theory and management practice and suggestions for further research.

## **4.2. Theoretical Framework and Hypotheses**

### **4.2.1 Co-creation activities and potential negative effects**

When it comes to co-creation activities, which aim at integrating consumers as knowledge source in firms' innovation process, literature mainly refers to lead user integration, crowdsourcing via innovation communities/platforms, idea contests and online suggestions boxes (e.g., Bayus 2013; Dahlander and Piezunka 2014; Franke, Von Hippel, and Schreier 2006; Franke, Keinz, and Klausberger 2013; Poetz and Schreier 2012). Much research has been done on activities to integrate consumers' knowledge, investigating how, when and why these activities can help increase efficiency and effectiveness in innovation processes (e.g., Fang, Palmatier, and Evans 2008; Franke, Keinz, and Steger 2009; Hoyer et al. 2010). Increased efficiency is related to cost minimization due to faster speed-to-market (Fang, Palmatier, and Evans 2008), reduced risk of product failure and inventory holding costs (Ogawa and Piller 2006), post-launch gains through continuous product improvements and exploration of additional usages (Xie, Bagozzi, and Troye 2008). Increased effectiveness refers to a greater degree of novelty (Kristensson, Gustafsson, and Archer 2004; Nishikawa, Schreier, and Ogawa 2013; Poetz and Schreier 2012), to a closer fit of the product to consumers' preferences (Hoyer et al. 2010; Poetz and Schreier 2012), and to the commercial potential of the co-developed product (Fang, Palmatier, and Evans 2008; Franke, Von Hippel, and Schreier 2006; Franke, Keinz, and Steger 2009; Ogawa and Piller 2006). Thus, co-created products were often found to outperform traditionally developed ones in many respects (Nishikawa, Schreier, and Ogawa 2013).

Another stream of research focuses on positive outcomes for participating consumers. Participants were found to perceive enjoyment while, for instance, solving problems or designing new products (Dahl and Moreau 2007; Franke and Schreier 2010; Von Hippel 2005; Schreier 2006). Thus, enjoyment during the co-creation activity can be a source of hedonic value for consumers (Nambisan and Baron 2009). In addition, the interaction with firms by itself and approval by the firm can be a source of relational value for consumers (Chan, Yim, and Lam 2010; Eisingerich, Auh, and Merlo 2014).

Research on potential negative effects from an interaction between firms and consumers in co-creation activities is rare (e.g., Eisingerich, Auh, and Merlo 2014; Hoyer et al. 2010). From a firm-level perspective, Chan, Yim, and Lam (2010) observed an increased level of work-related stress for employees, who were interacting with the consumers and managing the co-creation activity. Only recently, researchers started to investigate negative

consequences of consumers' dissatisfaction with the process or outcome of co-creation activities (Breithut 2011; Gebauer, Füller, and Pezzei 2013). In a case study on a design contest for a retailer's shopping bags, Gebauer and colleagues (2012) found that participants showed negative reactions, like negative WoM, if they were dissatisfied with the outcome of the contest and perceived the decision as unfair.

This lack of research is surprising for at least four reasons. First, several authors have already pointed out that interacting with consumers to co-create value can be risky and requires careful management, especially when firms are inexperienced in that field (Balka, Raasch, and Herstatt 2014; Dahlander and Piezunka 2014; Di Gangi 2010; Piezunka and Dahlander 2014). Negative effects are expected to occur if firms fail in providing positive experiences during the integration process (e.g., Di Gangi 2010; Füller, Hutter, and Faullant 2011; Gebauer, Füller, and Pezzei 2013; Nambisan and Baron 2007). Second, several co-creation activities, such as idea contests, ensure by their very nature winning and losing ideas (Franke, Keinz, and Klausberger 2013; Terwiesch and Xu 2008). Third, co-creation activities typically generate numerous ideas, but firms only have a limited attention capacity (Bayus 2013; Dahlander and Piezunka 2014; Hoyer et al. 2010; Piezunka and Dahlander 2014). And finally, the developed ideas will vary in quality, newness, and strategic fit. Hence, even if capacities were sufficient, firms presumably are only interested in a small number of ideas, which they consider as suitable (Bayus 2013; Piezunka and Dahlander 2014). As a consequence, many ideas, which consumers submit in co-creation activities, are refused.

#### **4.2.2 Social exclusion**

To provide an overview of potential consequences, which may result as firms refuse consumers' ideas generated in co-creation activities, we turn to social psychology literature.

For individuals, it is a fundamental need to enter social connections, which satisfy the sense of belonging (e.g., Molden et al. 2009; Twenge et al. 2001). *Social exclusion* can be perceived as a threat to belonging, and can evoke strong negative attitudes, behavioral intentions, and behavior (e.g., Twenge et al. 2001; Warburton, Williams, and Cairns 2006; Williams, Cheung, and Choi 2000). Molden and colleagues (2009) suggest that social exclusion can be differentiated regarding the level of directness: Individuals can either (1) receive explicit negative feedback, which is actively communicated, and thus get rejected by others, or (2) receive implicit indications of the lack of social connection, and thus get ignored by others.

An explicit rejection gives the individual the possibility to react on the negative feedback. Thus, the individual is still able to participate in the social interaction (Aquino and Lamertz 2004). By contrast, being ignored suggests that one does not play a role in a relationship and is not worthy of social attention (Brock Bastian and Haslam 2010; O'Reilly et al. 2014; Williams and Nida 2009). In addition, Robinson, O'Reilly, and Wang (2012) find the experience of being ignored to be more ambiguous. While a rejected individual only has to decide whether the negative interaction was harmful or not, an ignored individual has to deal with the ambiguity whether a negative experience happened at all and what it means (Williams 2001; 2009). Based on this rationale, several authors argue that it should be more difficult to cope with the experience of being ignored (e.g., Robinson, O'Reilly, and Wang 2012; Williams 2001). Being ignored is said to be even more painful than extreme forms of rejection, such as bullying (e.g., Williams and Nida 2009). And indeed, negative consequences are suggested to differ in nature and intensity if individuals were being ignored or being rejected. Rejected individuals, who are aware of the negative interaction, are more likely to attribute the negative outcome to themselves and think about their own mistaken actions. Hence, being explicitly rejected seems to cause more cautious, restrained and inward-directed actions (Molden et al. 2009). On the contrary, ignored individuals face uncertainty about the negative interaction. Thus, their sense of control and feeling of meaningful existence is significantly diminished (Williams 2001; 2009). They tend to exhibit more careless, unrestrained and outward-directed behavior to restore control and force others to recognize their existence (Molden et al. 2009; Williams 2009).

Evidence indicates that social exclusion evokes negative attitudes and behavior (e.g., Buckley, Winkel, and Leary 2004; Leary, Twenge, and Quinlivan 2006; Twenge et al. 2001). Social exclusion was found to negatively affect an individual's attitude toward the source of exclusion (e.g., Buckley, Winkel, and Leary 2004; Leary et al. 1995; Twenge et al. 2001). Compared with individuals who were invited to participate in a work team, rejected individuals rated their rejecters as less likeable (Bourgeois and Leary 2001). Similar results were found for cases of being ignored. Williams and colleagues (2002) found that when ignored in a chat room, individuals rated other chat room participants as less likeable, less friendly and more dishonest compared to included individuals. In addition, individuals were found to perceive those who had ignored them as less human, and characterize them as superficial, mechanical and cold (Bastian and Haslam 2010).

Social exclusion is also found to negatively affect behavioral intentions and actual behavior (e.g., Twenge et al. 2001; Warburton, Williams, and Cairns 2006). Social

psychology research implies that reaction patterns are quite different when individuals are ignored or rejected. For instance, rejected subjects tend to withhold positive rewards from their partners (Buckley, Winkel, and Leary 2004; Maner et al. 2007). In addition, rejection may cause a substantial reduction in pro-social behavior, like being helpful to others, donate money, or cooperate in games (Twenge et al. 2007). By contrast, ignored subjects in face-to-face interaction, as well as in online communication, express the intention to take revenge, punish and hurt their partners or even noninvolved subjects (Warburton, Williams, and Cairns 2006; Williams, Cheung, and Choi 2000). In mobile communication ignored individuals tried also to provoke their counterparts (Smith and Williams 2004). Moreover, the effect of social exclusion on aggressive behavior was shown to be greater when individuals possess less power than the party that ignored them (Schoel, Eck, and Greifeneder 2014).

Any interaction between a firm and a consumer can be understood as exchange within a social relationship (e.g., Berry 1995; Vargo and Lusch 2004). During co-creation activities consumers deliberately choose to enter into a temporary social relationship with a firm, and contribute with their ideas to a firm's NPD processes (e.g., Hoyer et al. 2010; Payne, Storbacka, and Frow 2008). In this context, a firm becomes the source of exclusion when they reject or ignore consumers' ideas. Like in other social relationships, being excluded should negatively affect consumers' attitudes and behavior (e.g., Buckley, Winkel, and Leary 2004; O'Reilly et al. 2014; Twenge et al. 2001). In the co-creation context, negative consequences are particularly likely to occur, since consumers' perception of the interaction was found to depend highly on its outcome (Franke, Schreier, and Kaiser 2010). In addition, negative effects are likely to be fuelled by the unequal distribution of power between the consumer and the firm (Schoel, Eck, and Greifeneder 2014).

#### **4.2.3 Effects of being rejected or ignored on consumers' attitudes and behavior**

As a first step, we develop rationale how ignoring and rejecting consumers' ideas in co-creation activities affect consumers' attitudes. Consumers' attitude toward a firm means a consumer's prevailing tendency to evaluate a firm favorably or unfavorably (e.g., Eagly and Chaiken 1993; Fishbein and Ajzen 1975). Consumer' attitude is said to be a learned predisposition and is developed from environmental stimuli. Thus, it can be evaluation, memory, or both (e.g., Albarracín et al. 2005; Fishbein and Ajzen 1975). For instance, consumers' attitude toward a firm is based on the knowledge, perceptions and feelings acquired and triggered by a combination of (prior) direct experience and interaction with the firm and related information from various sources. Thus, even a single negative interaction is

likely to diminish consumers' attitude toward the firm (Grégoire, Laufer, and Tripp 2010). If firms socially exclude participants in co-creation activities by ignoring or rejecting their ideas, these consumers most likely will be left with a negative impression of that particular interaction experience and subsequently rate the firm as source of exclusion more negatively (e.g., Buckley, Winkel, and Leary 2004; Leary, Twenge, and Quinlivan 2006; Twenge et al. 2001). For these reasons, we hypothesize that when a firm excludes consumers by ignoring or rejecting their ideas, their attitude toward the firm will be negatively affected:

*H1a: The experience of being ignored by a firm negatively affects consumers' attitude toward the firm.*

*H1b: The experience of being rejected by a firm negatively affects consumers' attitude toward the firm.*

To understand whether the effect of ignoring and rejecting ideas is qualitatively different, we compare the impact of both response types on consumers' attitude toward the firm. As already mentioned, findings from social psychology imply that being ignored signals that one is meaningless and unworthy of others' attention at all (Bastian and Haslam 2010; Molden et al. 2009; Williams and Nida 2011; Williams, Cheung, and Choi 2000). Also for the interaction context between firms and consumers, authors like Berthon and colleagues (2011) assume that being ignored may give consumers the impression that their views and efforts are irrelevant to the firm, which may cause a worse perception of the firm than an explicit rejection. In line with this notion, the Author Nassim Nicholas Taleb (2010, p.24) (Taleb 2010) speaks of "*the courtesy of rejection letters {...} instead of the far more insulting and demeaning silence.*" (Zadro, Williams, and Richardson 2005) found that compared to a dispute, being ignored was more discomfoting for the individual. Besides, O'Reilly and colleagues (2014) contrasted the experience of being ignored with an open harassment at the workplace. They showed that even in comparison with an extreme form of negative attention, being ignored was a stronger threat for the need to belong, more detrimental to subjective well-being, and affected work-related attitudes more negatively. In case of ignoring consumers' ideas the firm also completely withholds relational approval from the consumer (Chan, Yim, and Lam 2010). By contrast, the rejection of their ideas gives consumers the feeling to still participate in a social relationship with the firm and the possibility to react on the negative interaction (Aquino and Lamertz 2004). Thus, we posit that when a firm ignores consumers' ideas, their attitude toward the firm will be more negatively affected compared to a rejection:

*H2: The experience of being ignored by a firm affects consumers' attitude toward the firm more negatively than the experience of being rejected.*

As described above, social exclusion may not only lead to negative attitudes, but also to congruent behavior. In case of interactions between firms and consumers, studies particularly refer to negative effects on consumers' WoM intentions and behavior (e.g., Bougie, Pieters, and Zeelenberg 2003; Grégoire, Tripp, and Legoux 2009; John and Klein 2003; Strizhakova, Tsarenko, and Ruth 2012).

Evidence also indicates that reactions may differ depending on whether the firm ignores an idea or explicitly rejects it. Being ignored implies greater ambiguity, which is a greater threat to control and meaningful existence (Robinson, O'Reilly, and Wang 2012; Williams 2001), so that the likelihood of aggressive behavior increases (Warburton, Williams, and Cairns 2006). This behavior is associated with a "fight" strategy, for instance through the spreading of negative WoM (Williams 2007). By actively sharing their negative experience with others, customers try to gain recognition (Williams 2009) and punish the firm for caused damages (Grégoire and Fisher 2006; Grégoire, Tripp, and Legoux 2009). In the organizational context, O'Reilly and colleagues (2014) found that ignored employees exhibited greater intention for quitting their job than those affected by harassment at work. In addition, especially in activities of a competitive nature, regulations ensure and also inform participants that not every submitted idea will win (e.g., Franke, Keinz, and Klausberger 2013). Thus, participants may at least be aware of the possibility of a rejection. Unexpected negative outcomes were found to increase the threat to psychological needs and thus, also increase aggressive behavior (Wesselmann et al. 2010). Consequently, it can be assumed that ignored participants exhibit greater intentions to actively engage and spread negative WoM. Thus, we posit:

*H3: The experience of being ignored by a firm leads to a greater intention for negative WoM than the experience of being rejected.*

In a next step, we investigate how emotions and cognitions affect the relationship between the two forms of social exclusion and the attitudinal and behavioral reactions. We investigate whether anger mediates consumers' attitude change and behavior following an exclusion (H4), and whether consumers' expectations play a moderating role (H5).

#### **4.2.4 The mediating role of anger**

To understand the emergence of negative effects, we turn to social psychology literature again, which may help explain the connection between firms' responses and consumers' attitudes and actions in the context of a social relationship.

As far as emotions are concerned, after being excluded individuals were shown to feel distressed, hurt and ill-tempered (e.g., Van Beest and Williams 2006; Warburton, Williams, and Cairns 2006; Williams, Cheung, and W. Choi 2000). Excluded individuals also were found to exhibit higher levels of sadness and anger than included individuals (e.g., Buckley, Winkel, and Leary 2004; Smith and Williams 2004; Zadro, Williams, and Richardson 2004). Contrary to sadness and negative emotions in general, evidence implied that anger was the emotional link between social exclusion and the resulting antisocial behavior (Belschak and Hartog 2009; Chow, Tiedens, and Govan 2008; Twenge et al. 2007).

According to appraisal theory, individuals' primary appraisal of an event is based on the perceived positivity or negativity of the event outcome (Lazarus 2001; Weiner 1985; 2000). Immediately after the appraisal, causal attribution occurs, which leads to distinct emotions (Roseman 1991). When distinguishing between negative emotions, the element of blame becomes important (Bougie, Pieters, and Zeelenberg 2003; Lazarus 2001; Roseman, Spindel, and Jose 1990). Anger tends to be triggered if concrete external sources, such as a person, a firm, or circumstances can be blamed for a negative experience or outcome. In contrast, sadness tends to be triggered if individuals have to blame themselves (Bonifield and Cole 2007; Bougie, Pieters, and Zeelenberg 2003; Roseman 1991). In addition, anger was found to increase when the negative experience is unexpected and perceived as unfair (Chow, Tiedens, and Govan 2008; Kulik and Brown 1979; Wesselmann et al. 2010).

If consumers get ignored in the context of a co-creation activity, they know the source of exclusion. Thus, they may blame the firm for the negative experience and become angry (Bougie, Pieters, and Zeelenberg 2003; Roseman 1991). During the co-creation event, participants invest effort, time, and energy. Developing a new product idea has been shown to elicit feelings of accomplishment and pride (Franke, Schreier, and Kaiser 2010; Lea and Webley 1997; Schreier 2006), which adds more value to an idea from the consumers' view (Franke, Schreier, and Kaiser 2010). Since most participants will be proud of their ideas, being ignored will be considered as unfair, which may further increase their anger (Chow, Tiedens, and Govan 2008; Kulik and Brown 1979; Wesselmann et al. 2010).

In case of a rejection, it is unlikely that consumers attribute the blame exclusively to the firm. Compared with ignored individuals, Molden and colleagues (2009) found that rejected

individuals reported significantly more thoughts about own mistakes, which may have led to the rejection. Thus, it is likely that rejected consumers will not only blame the firm, but also themselves (e.g., lack of creativity) and their idea (e.g., unsuitable) for the negative experience (Bonifield and Cole 2007; Gelbrich 2009; Roseman 1991). In addition, Zadro, Williams, and Richardson (2004) found that providing an explicit reason for the experience of being excluded reduced its negative impact on anger. As mentioned above, in most co-creation activities it is made clear that not every idea can win and/or will be considered further (Franke, Keinz, and Klausberger 2013). Moreover, firms regularly communicate the jury's decision process and evaluation criteria (Bayus 2013; Bullinger et al. 2010). Hence, rejected consumers are likely to be less angry than ignored ones.

Anger is found to be accompanied by the desire to attack and hurt the source of anger (Bonifield and Cole 2007; Bougie, Pieters, and Zeelenberg 2003). Numerous studies demonstrate that anger triggered negative WoM intentions (Gelbrich 2009) and behavior (Bougie, Pieters, and Zeelenberg 2003; Wetzler, Zeelenberg, and Pieters 2007). Angry consumers use negative WoM to get back at the firm and hurt its business (Bougie, Pieters, and Zeelenberg 2003). In addition, Chow and colleagues (2008) found that anger mediates the relationship between social exclusion and antisocial behavior.

We posit that the experience of being ignored by the firm in a co-creation activity will cause greater feelings of anger than the experience of being rejected by the firm. In addition, we hypothesize that anger will mediate between firm response (idea ignored or rejected) and consumers' perception of the firm and their behavioral intentions.

*H4a: The experience of being ignored by a firm leads to a greater feeling of anger than the experience of being rejected.*

*H4b: The effect of a firm's response on consumers' attitude toward the firm is mediated by the feeling of anger.*

*H4c: The effect of a firm's response on consumers' intention for negative WoM is mediated by the feeling of anger.*

#### **4.2.5 The moderating effect of consumers' expectations**

Weiner's (1985) already described cognition-emotion process also refers to cognitions influencing the attribution process. Thus, any prior knowledge or beliefs are likely to moderate the effect of an outcome on the concurring emotions (Weiner 2000). Service and complaint research widely investigated expectations in the context of firm-consumer interactions since these were shown to influence the evaluation of experiences and interaction with firms (e.g., Boulding et al. 1993; Choi and Mattila 2008; Hess, Ganesan, and Klein

2003). Consumer expectations are consumers' beliefs about a firm, brand, product or service before an experience or trial (Olson and Dover 1979). Consumers form expectations as predictions of what will and should happen (Boulding et al. 1993; Zeithaml and Berry 1993). They are mainly based on past experience, prior knowledge and information given by the firm or others (e.g., WoM communications, explicit and implicit corporate communication) (Morgan and Piercy 1992; Zeithaml and Berry 1993).

The "Expectations-Perception-Gap" helps explaining negative consumer emotions and behavior following firm-consumer interaction. Consumers compare a firm's perceived performance to their existent expectations (Oliver 1980). When performance does not meet expectations, the negative disconfirmation of expectations lead to dissatisfaction (e.g., Parasuraman, Zeithaml, and Berry 1994; Parasuraman, Zeithaml, and Berry 1985; Zeithaml and Berry 1993). The higher consumers' expectations of a firm's performance the worse are consequences in case of a negatively disconfirming outcome (McCollough, Berry, and Yadav 2000).

For a consumer with high expectations of a firm's professionalism in co-creation activities (i.e., in integrating consumers knowledge) the experience of being ignored by the firm is a negative disconfirmation of their expectations (e.g., McCollough, Berry, and Yadav 2000; Oliver 1980). Hence, the disconfirmation is likely to be greater than for participants with low expectations. Moreover, the experience of being ignored is even more unexpected as before. Thus, the feeling of anger should be increased (Kulik and Brown 1979; Wesselmann et al. 2010). In contrast, a rejection in the course of a co-creation activity is also part of firms' routine and processes in case of high expectations (Franke, Keinz, and Klausberger 2013). The consumer has still to expect a rejection of their submitted ideas and suggestions and thus, consumers' expectation of a firm's professionalism in co-creation activities should not have an impact on the effect on anger in case of a rejection. For this reasons we hypothesize that consumers' expectations of a firm's professionalism in co-creation activities acts as a moderator of the effect of firm response on anger:

*H5: The effect of a firm's response on anger is moderated by consumers' expectations of a firm's professionalism in co-creation activities, such that it is stronger for a high level of expectations than for a low level.*

### **4.3. Experimental Study**

#### **4.3.1 Overview**

With our study we investigate how consumers' attitude toward a firm and their WoM intention are affected when they are ignored or rejected by a firm in a co-creation activity. We also seek to understand whether the emotion anger can help explain negative reactions. In addition, we explore whether consumers' expectations of a firm's professionalism in co-creation activities play a role in this relationship. Therefore, we invited consumers to take part in an idea contest of a fictitious start-up firm. Information about the firm and the contest instructions were used to raise either (1) high or (2) low consumer expectations of a firm's professionalism in co-creation activities. After participants had submitted their ideas, they were randomly assigned to one of the firm response conditions and their ideas were either (1) ignored or (2) rejected.

#### **4.3.2 Method**

##### **4.3.2.1 Participants and design**

111 students (30.6% female, age span 19 to 30 years,  $M = 25.01$ ,  $SD = 2.53$ ), who were enrolled in a senior-level business course at a large European university, participated in an idea contest. The purpose of the contest was to develop ideas for a fictitious start-up that intended to expand its product portfolio for its market launch. Participants were randomly assigned to the conditions of a 2 (firm response to submitted idea: "ignored", "rejected") x 2 (participants' expectation of the firm's professionalism in co-creation activities: "high", "low") between-subject design. As incentive for their participation, students could win five gift certificates á 50 €. In addition, students were informed that the winner of the contest could win 200 € and get the opportunity to present the winning idea to the founders.

##### **4.3.2.2 Procedures**

Participants were told that they are given the opportunity to participate in a design contest for "CUBIS" a fictitious start-up for modular furniture. This type of co-creation activity is en vogue among firms. In addition, literature refers to idea contests as a way to capture innovative ideas of motivated users for new product development (e.g., Terwiesch and Xu 2008). The approach of a competition ensures that there will be "winner" and "loser" ideas (Franke, Keinz, and Klausberger 2013).

At the beginning of the contest, participants were randomly assigned to one of the "expectations" conditions and guided to two separate workspaces. After welcoming the

participants, they were informed about the firm and instructed about the task. The information about the firm was different between the two rooms, in order to manipulate the participants' expectations of the firm's professionalism in co-creation activities. In the "low expectations" condition, the founders were described as rather inexperienced with co-creation activities. In the "high expectations" condition, the founders were described as very experienced (please see Appendix A for details). In a pretest, the priming manipulation had been validated. After viewing the paragraph from one of the two conditions, participants completed three 7-point Likert scale items (disagree=1, agree=7: "*In the idea contest, I expect CUBIS to treat all participants fairly.*"; "*I expect CUBIS to consider the ideas for implementation after the idea contest.*"; "*I have the feeling that CUBIS is experienced and able to adequately evaluate and select the best ideas from the idea contest.*"). As expected, the pretest participants rated their expectations of the firm's professionalism in co-creation activities higher in the high expectations condition ( $M = 5.93$ ) than in the low expectations condition ( $M = 3.19$ ;  $t(16) = -9.02, p < .01$ ).

The instructions informed participants about the purpose of the contest (i.e., "develop ideas to expand CUBIS' portfolio") and the general condition of the contest (e.g., time limit, provided material, such as crayons and scissors). Participants were also informed that the founders would act as jury, who would announce their decision around 60 minutes after ideas had been submitted.

For 60 minutes, participants could work on their ideas. After having submitted the idea, they filled out a questionnaire, which contained a number of dummy questions about the contest, the manipulation check, controls, ex-ante attitude towards and trust in the firm, as well as demographics. Participants were informed that the jury would screen their ideas now. In the meantime, participants had to work on a case study assignment for their business course to prevent any further conversation about the idea contest.

After approximately an hour, participants were guided in separate rooms to get the firm's feedback on their idea. Participants were seated in front of a notebook and had to enter their ID in an online form to start a database query. Thereby, they were randomly assigned to one of the conditions (1) ignored, (2) rejected. In the "ignored" condition, participants received the message that the firm did not provide any feedback on their idea. In the "rejected" condition, they received negative feedback on their idea (please see Appendix B for the messages). During the priming procedure, participants' facial expressions were video recorded. Then, participants were asked to fill out a second questionnaire with measures of anger, sadness, ex-post attitude and trust, intention for negative WoM and a field for

comments about the firm and the contest. In addition, research assistants made notes of participants' verbal comments after the priming procedure.

Finally, participants were thanked and informed that they had been part of an experiment. The debriefing also clarified the experiment's purpose. Participants were also asked to allow us to use their video recordings and answers in our analysis. In the case of refusal, their data would have been deleted immediately. However, all of the participants agreed to the use of their data. In the end, we offered participants snacks and beverages and presented them a box of candies.

#### 4.3.2.3 Measures

*Dependent variables.* Consumers' attitude toward the firm was measured before and after the priming. Thus, we can (1) compare ex-ante and ex-post measurement for each experimental condition, and (2) compare the difference in attitude (i.e., ex-ante minus ex-post measurement) between the two conditions. We adapted three items (*good, favorable, likeable*;  $\alpha = .93$ ) from Hagtvedt (2011), measured on seven-point scales. To check for the robustness of our model, we also measured consumers' trust in the firm ex-ante and ex-post. We adapted three items (*trustworthy, honest, authentic*;  $\alpha = .94$ ) (Chaudhuri and Holbrook 2001), measured on seven-point scales.

Consumers' intention for negative word-of-mouth (WoM) was only measured ex-post. We adapted the scale of Gregoiré, Läufer, and Tripp (2010) (How likely is it that you... (1) spread negative word-of-mouth about CUBIS, (2) denigrate CUBIS and its activities to your friends, (3) tell your friends not to buy products from CUBIS;  $\alpha = .83$ ). To validate the negative WoM intention, we also checked for WoM behavior. Therefore, we turned to the participants' comments about the firm and the contest. We coded them regarding the type of comment. The type of comment captures whether a participant did not write a comment at all, left a negative, or other comments (0 = no comment, 1 = negative comment, 2 = other comments)

*Mediating variables.* Anger as a self-reported measure was assessed by asking participants about their feelings after they had received the feedback on seven-point scales (*angry, irritated, annoyed*;  $\alpha = .80$ ) (e.g., Buckley, Winkel, and Leary 2004; Twenge and Campbell 2003). To validate the self-reported emotion of anger, we also video recorded participants' facial expressions of anger. The video material was analyzed with FaceReader

5.0 (Noldus 2012)<sup>2</sup>. Anger was scaled from 0 (not present at all) to 1 (maximum intensity). Providing values for 30 frames per second, FaceReader uses face models synthesized from facial emotional behavior prototypes (Ekman and Friesen 1978). For each participant, we analyzed the maximum value of intentional facial expression from the start of the database query until the start of the questionnaire. However, FaceReader cannot assess participants' facial expressions when significant parts of the faces are obstructed (e.g., when the face is covered with a hand, the head is moved out of the camera angle, rotated, lowered or raised by more than 40°). As a result, the sample size for facial expressions was smaller than that for self-reports of anger (N = 60). To check whether an alternative negative emotion can help explain negative effects, we also included *sadness*. Sadness was assessed as a self reported measure, which includes three items (*sad, dejected, down*), measured on seven-point scales (Buckley, Winkel, and Leary 2004).

*Controls.* To account for other variables' impact on consumers' attitude, intentions and behavior following the co-creation activity, we included a set of control variables. We measured *participants' pride of their submitted idea* (three items adapted from Louro, Pieters, and Zeelenberg (2005);  $\alpha = .89$ ) and their *enjoyment* of the ideation process (two items adapted from Dahl and Moreau 2007;  $\alpha = .93$ ). In addition, we considered their *prior experience with co-creation activities*, their perception of the *fairness of the prizes* to win (both adapted from Franke, Keinz, and Klausberger 2013), their *product category involvement* (Van Trijp, Hoyer, and Inman 1996), their *product category knowledge* (Beatty and Talpade 2007) and their overall *prior mood* (Twenge et al. 2001) via single-item measurement. For all measures we used seven point-scales. In addition, we checked *participants' efforts* for the contest by examining and coding their contributions quantitatively (i.e., number of written pages, number of sketches) (1= low effort, 2 = average effort, 3 = high effort). Please see Appendix C for measurement details.

*Manipulation and suspicion check.* To assess consumers' expectations of a firm's professionalism in co-creation activities we used three items, measured on seven point-scales ("*In the idea contest, I expect CUBIS to treat all participants in a decent manner.*"; "*I expect CUBIS to consider the ideas for implementation after the idea contest.*"; "*I have the feeling that CUBIS has the experience to adequately evaluate and select the best ideas from the contest.*"). Finally, we turned to the participants' comments about the firm and the contest

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<sup>2</sup> The software exhibits high convergent validity with ratings by human Facial Action Coding System (FACS) coders and was already successfully used in psychology and consumer behavior research e.g., (Chan et al. 2014; Chentsova-Dutton and Tsai 2010; Lewinski, Franssen, and Tan 2014).

and the research assistants' notes of verbal comments to check whether participants had expressed doubts about the authenticity of the idea contest or the firm.

### 4.3.3 Analyses and results

#### 4.3.3.1 Preliminary analyses

Of the 111 participants, 14 participants had expressed doubts about the authenticity of the idea contest or the firm. These participants were removed from the analysis. One participant did not fill out questionnaire Q2 and was also removed from the sample. The results are presented for the remaining 96 participants.

The manipulation of participants' expectations of a firm's professionalism was successful, as indicated by an independent t-test ( $t(95) = -3.70, p < .01$ ). Participants expressed significantly higher expectations in the "high expectations" condition ( $M = 5.83, SD = 1.01$ ) than in the "low expectations" condition ( $M = 4.99, SD = 1.23$ ).

Due to a random assignment of participants to experimental groups, there were no significant differences between them with regard to any of the control variables (revealed by a series of ANOVAs). To control for individual differences we conducted a series of ANCOVAs and found only for the product category knowledge and perceived fairness of prizes as covariates a significant effect on consumers' attitude toward the firm. However, the findings related to tests of hypotheses H1, H2, and H3 as reported subsequently are not affected (i.e., similar significance levels are obtained if an ANCOVA instead of an ANOVA is run, thus accounting for product category knowledge and perceived fairness of prizes as a covariate in this model).

#### 4.3.3.2 Main effects

*Effect of firm response on consumers' attitudes toward the firm.* In the first step, we conducted dependent a t-test of ex-ante and ex-post measurement of consumers' attitude ( $t(47) = 7.00, p < .01$ ) for the "ignored" condition, and found support for hypothesis H1a. Consumers' attitude toward the firms before being ignored ( $M_{\text{ex-ante attitude, ignored}} = 5.08$ ); is significantly higher than ex-post ( $M_{\text{ex-post attitude, ignored}} = 3.47$ ). For participants, whose ideas were rejected, the dependent t-test reveals a significant worse attitude after the rejection as well ( $M_{\text{ex-ante attitude, rejected}} = 4.74; M_{\text{ex-post attitude, rejected}} = 4.25; t(47) = 2.77, p < .01$ ). Thus, we also find support for hypothesis H1b. In the next step, we compared the change in attitude (i.e., ex-ante minus ex-post measurement) between the two conditions (findings are based on

one-way ANOVA; for a summary see Table 5).<sup>3</sup> The decrease in attitude toward the firm is significantly higher for the “ignored” condition ( $M_{\text{change in attitude, ignored}} = 1.65$ ) than for the “rejected” condition ( $M_{\text{change in attitude, rejected}} = .49$ ;  $p < .01$ ). Thus, hypothesis H2 can be supported.

To check for the robustness of our results, we conducted the same tests using *consumers’ trust in the firm* as dependent variable. Like with attitude, we find that before being ignored, trust is significantly higher than ex-post ( $M_{\text{ex-ante trust, ignored}} = 5.12$ ;  $M_{\text{ex-post trust, ignored}} = 3.47$ ;  $t(47) = 6.78$ ,  $p < .01$ ). Similarly, before ideas were rejected, trust is significantly higher than ex-post ( $M_{\text{ex-ante trust, rejected}} = 4.77$ ;  $M_{\text{ex-post trust, rejected}} = 4.21$ ;  $t(47) = 3.14$ ,  $p < .01$ ). When comparing the change in trust between both groups, results also confirm our findings with attitude. The decrease in trust is significant higher for the “ignored” condition ( $M_{\text{change in trust, ignored}} = 1.65$ ) than for the “rejected” condition ( $M_{\text{change in trust, rejected}} = .55$ ;  $p < .01$ ).

*Effect of firm response on consumers’ intention for negative WoM.* To test hypothesis H3, we used an one-way ANOVA. We found that participants in the “ignored” condition reported significantly higher negative WoM intentions than in the “rejected” condition ( $M_{\text{nWoM, ignored}} = 2.94$  versus  $M_{\text{nWoM, rejected}} = 2.13$ ;  $F(1, 94) = 6.84$ ,  $p < .05$ ) (see Table 5). Thus, hypothesis H3 is supported. To check the robustness of our results and to get an indication of whether intentions comply with actual WoM behavior, we turned to the comments left by participants in the comment field (coded 0 = no comment, 1 = negative comment, 2 = other comment). We observed that 48 % of the participants from the “ignored” condition have left a negative comment compared to 29 % of the “rejected” condition. This finding suggests that negative WoM intentions are related to congruent behavior. The result of a  $X^2$  Test between the groups and the nature of participants’ comments ( $X^2 = 16.53$ ,  $p = .00$ ) lend further support to H3.

*Anger.* We conducted an one-way ANOVA for anger. Analyses revealed an effect of firm response on self-reported emotions ( $F(1, 94) = 6.81$ ,  $p < .05$ ). We validated the results for the self-reported measure with data for facial expressions and found an even stronger effect ( $F(1, 60) = 8.87$ ,  $p < .01$ ). As expected in hypothesis H4a, consumers were angrier in the “ignored” ( $M_{\text{anger (self-reported), ignored}} = 3.15$ ;  $M_{\text{anger (facial-expressions), ignored}} = .32$ ) than the

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<sup>3</sup> A significant Levene’s test indicates that error variances for both dependent variable are not equal across groups (change in attitude:  $F(1, 94) = 6.64$ ,  $p < .05$ ; change in trust:  $F(1, 94) = 5.76$ ,  $p < .05$ ). However, as group sizes are equal it can be assumed that ANOVA is robust against the violation of this assumption.

“rejected” condition ( $M_{\text{anger (self-reported), rejected}} = 2.35$ ;  $M_{\text{anger, (facial-expressions), rejected}} = .11$ ). In contrast, participants’ sadness did not differ significantly between the experimental conditions ( $F(1, 94) = .24, p > .05$ ).

**Table 5.** Effects of Firm Response: ANOVA Results

Dependent Variable	Ignored	Rejected	Significance Tests
Change in attitude toward firm <sup>a</sup>	M = 1.65, SD = 1.61	M = .49, SD = 1.21	F = 16.13 **
Change in trust in firm <sup>a</sup>	M = 1.65, SD = 1.69	M = .55, SD = 1.21	F = 13.54 **
Negative WoM intention <sup>a</sup>	M = 2.94, SD = 1.60	M = 2.13, SD = 1.44	F = 6.84*
WoM behavior <sup>a</sup>			$\chi^2 = 16.53$ **
none	.46	.29	
negative	.48	.29	
other	.06	.42	
Anger (self-reported) <sup>a</sup>	M = 3.15, SD = 1.62	M = 2.35, SD = 1.37	F = 6.81 *
Anger (facial expressions) <sup>b</sup>	M = .32, SD = .33	M = .11, SD = .13	F = 8.87 **

<sup>a</sup>  $n_{\text{ignored}} = 48, n_{\text{rejected}} = 48$

<sup>b</sup>  $n_{\text{ignored}} = 35, n_{\text{rejected}} = 27$

\*  $p < .05$ , \*\*  $p < .01$

#### 4.3.3.3 Mediation via anger<sup>4</sup>

Next we tested whether participants’ anger mediated the effect of firm response (1) on the change in attitude toward the firm, and (2) on intentions for negative WoM. Two prerequisites for mediation as specified by Baron and Kenny (1986) were already satisfied by the results: different firm responses caused significant differences in self-reported anger and in both dependent variables. Consistent with the third condition for mediation, we found a significant relationship between self-reported anger and both dependent variables: (1) change attitude toward the firm ( $r = .65, p < .01$ ) and (2) intentions for negative WoM ( $r = .47, p < .01$ ).

To test for mediation, we regressed the change in attitude toward the firm on firm response, controlling for the effects of anger. The analysis revealed that when the effects of anger were taken into account, the effect of firm response on the change in attitude toward the firm decreased significantly, although it remained a significant predictor ( $z = 2.45, p < .05$ , see Fig. 2). Thus, hypothesis H4b can be supported. Anger partially mediates the effect of a firm’s response on the change in attitude toward the firm. By contrast, when using negative WoM intentions as dependent variable, the effect of a firm’s response became

<sup>4</sup> Due to the smaller sample size for anger assessed by facial expressions, we conducted the mediation analysis for self-reported anger only.

insignificant when controlling for the effects of anger ( $z = 2.23, p < .05$ , see Fig. 2), which indicates full mediation.<sup>5</sup>

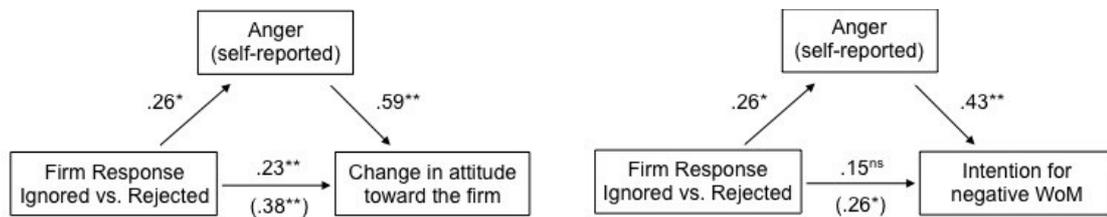


Figure 2. Mediation via Anger

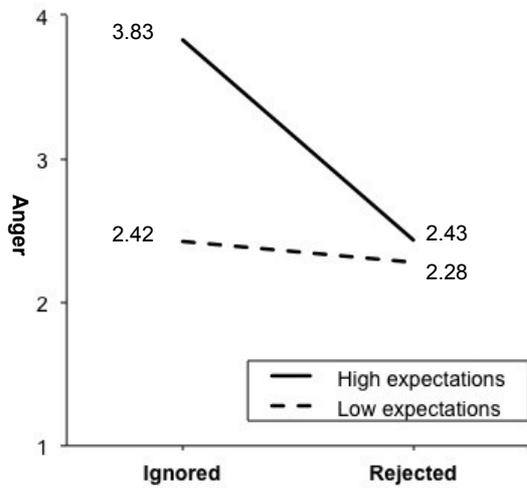
#### 4.3.3.4 Moderating impact of consumers' expectations

We analyzed the moderating effect of consumers' expectations of a firm's professionalism in co-creation activities conducting a factorial ANOVA with self-reported anger as dependent variable and firm response and consumers' expectations of the firm's professionalism in co-creation activities as between-subject factors. The analysis yielded significant main effects of firm response ( $F(1, 92) = 6.97, p < .01$ ) and of consumers' expectations ( $F(1, 92) = 7.15, p < .01$ ) on self-reported anger. These effects can also be shown for anger as facial expression (firm response:  $F(1, 58) = 9.41, p < .01$ ; expectations:  $F(1, 58) = 6.11, p < .05$ ). The feeling of anger was greater for participants, whose ideas were ignored ( $M_{\text{anger (self-reported), ignored}} = 3.12; M_{\text{anger (facial-expressions), ignored}} = .31$ ), than for those in the "rejected" condition ( $M_{\text{anger (self-reported), rejected}} = 2.35; M_{\text{anger (facial-expressions), rejected}} = .11$ ). In addition, high expectations were found to increase anger ( $M_{\text{anger (self-reported), high}} = 3.13, M_{\text{anger (self-reported), low}} = 2.35; M_{\text{anger (facial-expressions), high}} = .29, M_{\text{anger (facial-expressions), low}} = .13$ ). As proposed in H5, there was a significant interaction between firm response and consumers' expectations of the firm's professionalism in co-creation activities ( $F(1, 92) = 4.62, p < .05$ ).<sup>6</sup> Figure 3 illustrates the effects of firm response and consumers' expectations on anger. In case of low expectations ignored participants did not report significantly greater feelings of anger compared with rejected participants ( $M_{\text{anger (self-reported), ignored, low}} = 2.42, M_{\text{anger (self-reported), rejected, low}} = 2.28; F(1, 45) = .14, p = .71$ ). By contrast, in case of high expectations, ignored

<sup>5</sup> Again, the robustness of the results is supported when trust is tested as dependent variable ( $z = 2.35, p < .05$ ). Firm response remains a significant predictor and thus, the Sobel test indicates a partial mediation.

<sup>6</sup> Also results for facial expressions reveal an interaction effect. High expectations increased the difference between the experiences of being ignored and being rejected ( $M_{\text{anger (facial-expressions), ignored, high}} = .43, M_{\text{anger (facial-expressions), rejected, high}} = .15; M_{\text{anger (facial-expressions), ignored, low}} = .19, M_{\text{anger (facial-expressions), rejected, low}} = .08$ ). However, the effect is slightly not significant ( $F(1,58) = 1.78, p = .19$ ).

participants were significantly angrier than rejected participants ( $M_{\text{anger (self-reported), ignored, high}} = 3.83$ ,  $M_{\text{anger (self-reported), rejected, high}} = 2.43$ ;  $F(1, 45) = 9.96$ ,  $p < .01$ ).



**Figure 3.** Effect of Firm’s Response and Expectations on Anger (self-reported)

Note. Standardized  $\beta$  coefficients reported.

\*  $p < .05$ , \*\*  $p < .01$

Subsequently, participants with low expectations exhibited also a smaller difference between the “idea ignored” and the “idea rejected” group for change in attitude towards the firm ( $M_{\text{change in attitude, ignored}} = 1.00$ ;  $M_{\text{change in attitude, rejected}} = .39$ ;  $F(1, 45) = 2.94$ ,  $p < .10$ ). However, differences were still (slightly) significant and thus, ignoring consumer ideas still the worse option. Regarding consumers’ intentions for negative WoM ANOVA results reveal no longer a significant higher intention for the ignored participants ( $M_{\text{nWoM, ignored}} = 2.42$ ;  $M_{\text{nWoM, rejected}} = 2.04$ ;  $F(1, 45) = .93$ ,  $p = .34$ ).

A series of Sobel tests in the different groups with high and low expectations did not reveal a mediating of anger for participants with low ( $z_{\text{attitude}} = .37$ ,  $p = .71$ ;  $z_{\text{nWoM}} = .36$ ,  $p = .72$ ) but for those with high expectations ( $z_{\text{attitude}} = 2.65$ ,  $p < .01$ ;  $z_{\text{nWoM}} = 1.80$ ,  $p < .10$ ). Thus, considering consumers’ expectations exhibit that the before tested mediation effects via anger were conditional and only exist for participants with high expectations.

#### **4.4. Discussion and Managerial Implications**

With this study we contribute to co-creation research by uncovering how consumers react if firms ignore or reject their idea. Hence, we started by investigating whether negative interaction experiences in a co-creation activity negatively affect consumers' attitude towards the firm. As expected we found a significant decline in attitude toward the firm for both participants whose ideas were rejected and whose ideas were ignored. Comparing the consequences following these different negative interaction experiences our results indicate that this decline is more severe for ignored participants. Ignored participants also exhibit a greater intention to spread negative WoM about the firm and their negative experiences.

These findings are consistent with the theory that ignored individuals tend to exhibit promotion orientated behavior and thus, rather chose a "fight" option by denigrating the firm to others to cope with the prior negative experience (Duhachek 2005; Van Beest and Williams 2006). These consumer intentions and behavior are already known for instance in the field of service and complaint management that deals damage control (e.g., following service or product failure) (Blodgett and Anderson 2000; Bougie, Pieters, and Zeelenberg 2003; Davidow 2003). However, in case of co-creation with customers prior research widely reveals that firms profit from integrating customers in their innovation process and thus, co-creating value with them (Fang, Palmatier, and Evans 2008; Franke, Von Hippel, and Schreier 2006; Hoyer et al. 2010). The findings reported in this paper add a new argument in the discussion of integrating customers' knowledge in the innovation process. The positive effects of innovative customer ideas may come at the price of worse attitude and intentions of negative WoM of the dismissed customers in the co-creation activity.

We also investigated consumers' emotion as potential process variable to mediate between the negative interaction experiences and negative outcome. Indeed, we found that ignored participants exhibit more anger compared with rejected participants. This can be shown for anger self-reported by the participants as well as for the analysis of their facial expression. The results also highlight that the feeling of anger can help explain the observed negative consequences for the firm. We found a partial mediation for the change in attitude and a full mediation for the effect of the firm response (i.e., idea ignored, idea rejected) on the idea on intention for negative WoM. Thus, we can contribute to co-creation/innovation literature by providing the feeling of anger as underlying process for negative consequences caused by ignoring and rejecting ideas in co-creation activities. These findings are consistent with service research where anger is found as a significant predictor of behavior such as,

switching, complaining (direct or third party), and negative WoM (Bougie, Pieters, and Zeelenberg 2003; Gelbrich 2009; Strizhakova, Tsarenko, and Ruth 2012).

Our findings further imply that when firms raise high expectations about their professionalism in conducting co-creation activities, customers get particularly frustrated when being ignored. Especially start-ups and smaller firms that have not yet a strong reputation to build on tend to emphasize values for the customer (e.g., enjoyment and sense of belonging) that arise from a collaboration with the firm in co-creation activities (e.g., Füller, Matzler, and Hoppe 2008). Thus, they also raise participants' expectations about interaction, fairness and outcome of the activity. Considering the findings of our study, this approach might be a double-ended sword as with high expectations negative consequences for dismissed participants could be increased. Established firms often use their one or external communities of brand enthusiasts for their co-creation activities to enhance identification with the brand or firm in the activity (e.g., Nambisan and Baron 2009). As indeed, Franke, Keinz, and Klausberger (2013) found these participants to be less critical concerning fairness perception when making the decision to join an activity. However, when it comes to the point that their ideas get ignored or rejected by the firm they love and they are enthusiastic about, also these participants may feel anger, exhibit subsequently a worse perception of the firm and may even engage in revenge behavior. There are even findings that these loyal and well-meaning customers are particularly affected by inadequate firm behavior (e.g., Goodman et al. 1995; Grégoire, Tripp, and Legoux 2009). This is in line with prior research in social psychology that has shown the experience of being ignored as a stronger threat for psychological needs when one shares a common identity with the perpetrator (e.g., a consumer who strongly identifies with the firm) (e.g., Bernstein et al. 2010). However, also participants with low expectations still exhibit lower attitudes *ex-post* the negative interaction experience. The decline in attitude is still greater for ignored participants, although the difference between the ignored and rejected participants is decreased.

For management practice our findings underline that it is crucial for firms to avoid non-response behavior, in order to avoid the most negative consequences of dismissing customer ideas. This calls for implementing processes, which secure that all ideas get, at the very least, rejected. However, the rejection of ideas will inevitably bring about anger, despite the best intentions and efforts of the firm. In such circumstances, managing the emotions of angry customers and the behavior that is instigated by them becomes crucial. Especially firms that emphasize values that raise expectations among participants in their communication should be aware of the potential negative consequences of their co-creation activity.

#### **4.5. Limitations and Suggestions for Future Research**

Our study has limitations that offer several interesting future research opportunities. In our study, we investigate the consequences on consumers' cognitions, emotions and behavior when their ideas get ignored or rejected by a firm. Since any co-creation activity implies that some ideas will get dismissed, future research should explore how firms can buffer the negative effects of rejecting these ideas.

Drawing from service, customer management, and complaint literature, adequate and professional responses to customer contact lead to customer satisfaction (e.g., Blodgett, Hill, and Tax 1997; Smith, Bolton, and Wagner 1999). Hence, it may be worthwhile to test whether the expectations-perception gap can be closed by a professional firm response (Bowman and Narayandas 2001; McCollough, Berry, and Yadav 2000). Procedural elements such as time (e.g., Blodgett, Granbois, and Walters 1994; Blodgett, Hill, and Tax 1997; Smith, Bolton, and Wagner 1999) and interactional elements, such as kindness and respect (e.g., Blodgett, Hill, and Tax 1997; McCollough, Berry, and Yadav 2000), but also apologies and explanations (e.g., McCollough, Berry, and Yadav 2000; Smith, Bolton, and Wagner 1999) were shown to enhance satisfaction with the overall outcome of an interaction. We already controlled in our experiment for a distributive dimension (i.e., fairness of prizes) (e.g., Franke, Keinz, and Klausberger 2013). However, future research could also test a distribution of prizes where every participant gets a small price for participation. Firm response could also focus on the relationship with the participant since customer engagement research reveals the relational value as relevant driver for customer satisfaction in co-creation activities (Chan, Yim, and Lam 2010). It might be interesting whether a response that values rejected participants by inviting them to special customer events (e.g., fan meetings, customer get-together) or future co-creation activities (e.g., Füller, Matzler, and Hoppe 2008). The anticipation of future interactions and an emotional bond might buffer negative effect of the rejection (Sashi 2012). Also responses that are accompanied by enjoying marketing material (e.g., video clips, games) related to the brand or firm could be tested. Thereby, participants' enjoyment and thus, the hedonic value that had been created during their participation should be addressed (Franke and Schreier 2010; Nambisan and Baron 2009). Although we already controlled for participants' pride and effort in our study, these two factors might become relevant when testing the effectiveness of rejecting responses. Participants' feeling of achievement and pride as well as their efforts during the ideation process were found to significantly increase the value of their idea (Franke and Schreier 2010; Franke, Schreier, and

Kaiser 2010). Hence, praising the quality of consumers' work as well as thanking them for their efforts might compensate negative effects of a rejection.

In our experimental setting we chose the product category furniture and a very simple problem to solve. Effects might be different for high-tech fields and complex tasks. However, we addressed the fact that our participants (students) need to have a basic level of experience with the product category as well as the ability to submit an idea in the contest. One can assume that the reported effects might be even stronger in fields where participants believe that only few others possess high relevant knowledge (e.g., Fuchs, Prandelli, and Schreier 2010; Poetz and Schreier 2012). In those circumstances, participants might have also high expectations not only about the process, but also about the outcome (i.e., their chance to submit a winner idea).

In addition, the participants of our idea contest were rather homogeneous (students, interested in innovation) and the experimental setting with a fictitious start-up expulse the measurement of several factors that are related with prior firm attitude and experience. Next to participants' ability to submit promising ideas, factors like closeness in relationship with firm, lead-user status and prior loyalty and brand identification as well as passion were found to impact the outcome of co-creation activities (e.g., Füller, Matzler, and Hoppe 2008; Mahr, Lievens, and Blazevic 2014). Thus, they may also affect the consequences of rejecting and ignoring customers' ideas. However, we already controlled for participants' prior experience with co-creation activities (Franke, Keinz, and Klausberger 2013). For future research it would be fruitful to complement our findings with the measurement of participants' characteristics in real life activities with real firms.

In our experiment, we used a fictitious start-up and manipulated the firm response and participants' expectations, while other factors, such as the type of co-creation activity, the format of the firm response and its timing had to be held constant. In idea contests for real firms, consumer will be confronted with different approaches, different and mostly longer time spans for evaluation, and also varying prior information and thus, individual perception of the hosting firm (Hienerth, Keinz, and Lettl 2011; Sawhney, Verona, and Prandelli 2005). Future research could employ non-experimental survey designs to establish whether the reported findings are generalizable to different co-creation settings and activity dimensions (e.g., evaluation modes, number of participants). Besides, it would be especially interesting if effects of ignoring and rejecting ideas remain stable in the setting of a community where selection is done by other users and/or contributors (O'Hern and Rindfleisch 2010; Toubia and Florès 2007). Prior innovation research assumes that also in community settings the

overall interaction experience (with the firm and other consumers) still affects consumers' attitude toward the hosting firm (Nambisan and Baron 2007). Thus, it should be observed whether dismissed participants really blame the hosting firm and express consequently their anger.

Finally, prior research in psychology reveals differences in the expression of emotion and also in subsequent intentions and behavior for Asians (e.g., Chentsova-Dutton and Tsai 2010). Even though we had some Asian participants in our sample the center of their life is in an European country and a cultural assimilation can be assumed. And indeed, their expression of anger did not differ significantly from the European participants. However, future research should include cross-cultural Studies.

## 4.6. Appendix

### Appendix A. Priming manipulation “Customer expectation”

#### High expectations

Mr. Becker and Ms. Schubert, founders and CEOs of CUBIS, have already gained experience with lead-user workshops, idea contests and user communities during their careers. Since both Mr. Becker and Ms. Schubert have seen products based on customer ideas succeed in the market place, they are convinced that one should include potential customers in the idea-generation process. In fact, they have experienced personally that customers do perceive direct contact and cooperation with organizations very positively. For this reason, CUBIS places great emphasis on designing business structures and processes in a way that will support a meaningful and enjoyable interaction for both the customer and the firm.

#### Low expectations

Mr. Becker and Ms. Schubert, founders and CEOs of CUBIS, have already gained experience in marketing departments during their careers. On the basis of the management literature, both Mr. Becker and Ms. Schubert know examples of products based on customer ideas, which have been successful in the market place. Therefore, they have decided to conduct an idea contest in order to include potential customers in the idea-generation process for the first time. Since both do not have experience with direct customer contact yet, they are intently looking forward to the output. If the ideas are interesting and feasible, they would like to consider designing business structures and processes in a way that will support a meaningful and enjoyable interaction for both the customer and the firm.

### Appendix B. Priming manipulation “Firm feedback”

#### No reply

Dear participant 21,

Unfortunately we did not get any feedback from CUBIS for you. Apparently, your idea was not given consideration. Since their evaluation process has already come to an end, we don't expect to get any further information for you.

#### Negative reply

Dear participant 22,

We would like to thank you for your participation in the CUBIS University Ideation. We have seen many great ideas. Unfortunately we cannot develop all ideas further and have to reject your idea. We are sorry that our feedback is not positive.

### Appendix C. Measurement

Construct	Items (1 = low agreement, 7 = high agreement )	$\alpha$
Manipulation Check	(1) In the idea contest, I expect CUBIS to treat all participants fairly. (2) I expect CUBIS to consider the ideas for implementation after the idea contest. (3) I have the feeling that CUBIS is experienced and able to adequately evaluate and select the best ideas..	.77
Anger (self-reported)	At this moment I am... (1) angry, (2) irritated, (3) annoyed.	.80
Sadness (self-reported)	At this moment I am... (1) sad, (2) dejected, (3) down.	.81
Attitude toward the firm	(1) My overall attitude towards the firm CUBIS is favorable. (2) I have a good impression of CUBIS. (3) CUBIS is a likeable firm.	.93
Trust in the firm	(1) The firm CUBIS is trustworthy. (2) CUBIS is an honest firm. (3) I consider CUBIS as an authentic firm.	.94
Intention for negative WoM	How likely is it that you... (1) spread negative word-of-mouth about CUBIS. (2) denigrate the CUBIS and its activities to my friends. (3) tell your friends not to buy products from CUBIS	.83
Pride	When I look at the idea I have self-generated... (1) the feeling I have can best be described by the word 'pride'. (2) I feel proud of having accomplished something. (3) I feel proud because I did a good job.	.89
Enjoyment	(1) I enjoyed the idea contest. (2) This task was a lot of fun.	.93
Prior experience with co-creation activities	How often have you participated in design contests like this one before (regardless of the product category)? (1 = never, 7 = very often)	–
Fairness of prizes	The prizes of the CUBIS design contest are fair.	–
Product category involvement	I am interested in furniture.	–
Product category knowledge	As compared to the average person, I would have said I was highly knowledgeable about the product category furniture.	–
Mood	At this moment my mood is ... (1 = very negative, 7 = very positive)	–

## 5. Overall Summary and Managerial Implications

This dissertation deals with the circumstances and effects of the so far neglected negative effects of integrating customers' knowledge in the innovation process (i.e., co-creation). While Chapter 2 builds a conceptual introduction that defines basic terms and gives an overview of previous research on the effects of customer engagement behavior manifested in co-creation, The papers presented in Chapter 3 and 4 aim to contribute to research and practice by empirically analyzing (1) the nature and the effects of firms' openness to customer engagement, especially their ideas and suggestions, on the market side; and (2) possible negative effects of firm behavior in integration activities on the consumer side.

In detail, Chapter 2 reviews empirical studies that have focused on how and when firms as well as customers are affected by the integration of customer input (i.e., their ideas and suggestions). The review of existing research reveals most notably positive effects of co-creation and thus, integrating customers and their so-called innovation potential into the innovation process for both, firms and customers (e.g., Eisingerich, Auh, and Merlo 2014; Kristensson, Gustafsson, and Archer 2004; Magnusson 2009). However, empirical research on the potential negative effects of the integration of customer input for firms as well as participating customers is rare. The literature also reveals that, as of yet, researchers have only offered anecdotal evidence and individual case studies. In addition, approaches used by managerial practice to integrate customer input into the innovation process are summarized and systematically compared. As result this chapter identifies not only different characteristics of such activities (i.e., stage of the innovation process, who initiated the contact, time, freedom of scope) but also a sustainable body of activities (i.e., toolkits for innovation, idea contests, innovation platform, user innovation communities, virtual concept and product tests, virtual market testing, screen and make use of complaints and requests, suggestion) used in practice and sufficiently researched. The literature review also reveals a lack of empirical research on customer-initiated activities compared with firm-initiated activities.

The first empirical paper, presented in Chapter 3, shed light on the nature and the effects of firms' actual openness to customer input as form of customer engagement behavior. Findings reveal that firms ignored inquiries with innovation potential more often (68%) than inquiries with referral and influencing (55%) and sales potential (26%). Moreover, 25% of those firms that responded to inquiries with innovation potential expressed their disinterest in the ideas submitted by customers. The observations also suggest that the

responses lack professionalism since firms replied for instance, less timely and precisely to this type of customer inquiry. Observing only inquiries with innovation potential results indicate that services (70%) and FMCG firms (74%) tend to ignore more often customers' engagement (i.e., their ideas and suggestions) than firms those produce durables (58%). Also responses from service firms lack professionalism compared to other sectors. Ideas received via the regular customer contact channels thus are widely handled inadequately. The results of the regression analyses support the assumption that an inadequate handling of customer-initiated contact can severely damage a firm's image in the market. Ignoring customers and rejecting their ideas both have a significant negative effect on the firm's image. The results also confirm the assumption that unprofessional responses to customer ideas negatively affect a firm's image. Since the effect exceeds the effect size of the other two variables, an unprofessional response behavior seems to be particularly negative for a firm's image. Thus, firms should respond timely, precisely and with courtesy on this type of customer engagement behavior. When combining encouraging and rejecting responses with three different values of unprofessionalism, results show that the degree of professionalism can act as a counterbalance: whether a firm's response is encouraging or rejecting does seem to matter when it is professional. Hence, from a managerial perspective, the results suggest that professional routines should be established to make sure that reaction to customer initiated contact with innovation potential is appropriate. Without systems that effectively screen, evaluate, and manage ideas and suggestions submitted by customers, firms may miss out on promising ideas (e.g., Hoyer et al. 2010; Poetz and Schreier 2012). Without professional responses, firms will also severely damage their image and reputation in the market. Several authors indicated that proactive and professional firms manage and facilitate co-creation efforts of customers by providing platforms for information exchange and interaction with the firm and other customers (e.g., Bayus 2013; Dholakia et al. 2009; Sawhney, Verona, and Prandelli 2005). Villarroel Ordenens and colleagues (2014) introduced an approach to analyze customer feedback using text mining techniques. This approach could be used for high volumes of unstructured textual data resulting from, for instance, e-mail inquiries, online reviews, and customer conversations on platforms. It enables firms to timely assess customers' feedback about product and service experience.

In addition, customers interested in interaction with the firm could be invited to customer get-together or encouraged for online customer trainings (e.g., Hibbert, Winklhofer, and Temerak 2012). Van Doorn and colleagues (2010) emphasized that firms like Apple and Google explicitly manage and control customer engagement behavior through product tests

and contact during conferences and special customer events. This may ease tasks for frontline employees, as there are clear routines and contacts they can refer to. Thus, even when the firm has to reject a customer's purpose of an improved product a professional rejection may still increase the relationship value for the involved, committed and loyal customer (e.g., Chan, Yim, and Lam 2010; Sashi 2012).

Chapter 4 shifts the perspective from the market to the consumer level. It focuses on the negative experiences of participants in idea contests (i.e., when their ideas are ignored or rejected) and analyzes which underlying processes are responsible for the negative effects. The results of a laboratory experiment reveal that being ignored or rejected both have a detrimental effect on consumers' attitude towards the firm. However, the effect is worse for being ignored and leads to a higher tendency to spread negative WoM about the firm and their negative experiences. The results further indicate that the feeling of anger mediates the effect of the negative experience on consumers' attitude towards the firm, their trust in the firm, and their intent to engage in negative WoM. In addition, the effect of a firm's response (ignoring versus rejection) on perceived anger is moderated by the expectations participants have before the idea contest, such that it is stronger for a high level of expectation than for a low one. Thus, ignored customers get particularly frustrated when firms raise high expectations about their professionalism in conducting co-creation activities. However, also participants with low expectations still exhibit lower attitudes ex-post the negative interaction experience. The decline in attitude is still greater for ignored participants, although the difference between the ignored and rejected participants is decreased.

For management practice these findings underline that it is crucial for firms to avoid non-response behavior, in order to avoid the most negative consequences of dismissing customer ideas. This calls for implementing processes, which secure that all ideas get, at the very least, rejected. However, the also the rejection of ideas will inevitably bring about anger, despite the best intentions and efforts of the firm. In such circumstances, managing the emotions of angry customers and the behavior that is instigated by them becomes crucial. Especially firms that emphasize values that raise expectations among participants in their communication should be aware of the potential negative consequences of their co-creation activity. This is of great importance especially for start-ups and smaller firms that have not yet a strong reputation to build on and tend to emphasize values for the customer (e.g., enjoyment and sense of belonging) that arise from a collaboration with the firm in co-creation activities (e.g., Füller, Matzler, and Hoppe 2008). Thus, they also raise participants' expectations about interaction, fairness and outcome of the activity. Considering the findings

of our study, this approach might be a double-ended sword as with high expectations negative consequences for dismissed participants could be increased. However, also established firms that often use their one or external communities of brand enthusiasts for their co-creation activities (e.g., Nambisan and Baron 2009) are not immune to those effects. Loyal and well-meaning customers are shown to be particularly affected by inadequate firm behavior (Goodman et al. 1995; Grégoire, Tripp, and Legoux 2009) and thus, should exhibit a worse perception of the firm and may even engage in revenge behavior after an episode of exclusion by the firm they love and they are enthusiastic about.

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