
Participation on Internal Crowdsourcing Platforms

Lucas Richter

Master Thesis

M.Sc. Business Administration

&

M.Sc. Innovation Management and Entrepreneurship

University of Twente

Student ID: confidential

Supervisor:

Drs. Patrick Blik

2nd Supervisor:

Dr. Jeroen Meijerink

University of Twente

Drienerlolaan 5

7522 NB Enschede

The Netherlands

Technische Universität Berlin

Student ID: confidential

Supervisor:

Paul Charles Wolf

2nd Supervisor

Prof. Dr. Jan Kratzer

Technische Universität Berlin

Straße des 17. Juni 1935

10623 Berlin

Germany

Abstract

Purpose – The purpose of this paper is to understand what drivers are relevant for employees to participate on internal crowdsourcing platforms. Besides it shall provide an overview of potential tools that practitioners can utilize to counteract low levels of participation.

Design/methodology/approach – This is an empirical paper. It particularly applies qualitative analysis to better understand the underlying dimensions for participation on internal crowdsourcing platforms. Ten semi-structured interviews are conducted with platform managers and ordinary employees from Sparkasse.

Findings – The main result of the paper is that six dimensions play a major role for the participative behavior of employees on internal crowdsourcing platforms namely corporate culture, incentives and rewards, leadership style and management support, environment and resources, technological features and communication. Organizational as well as technological dimensions play a role in online crowdsourcing platforms.

Research limitations/implications – The main implication is that the framework consist of six dimensions which are of diverse organizational, social or technological nature. The different identified dimensions have to be further investigated and empirically tested, especially on their interrelationship.

Practical implications – Practitioners have a multitude of tools they can apply to increase participation on the platforms and at the same time reduce factors hindering it. By increasing the participation untapped knowledge and creative potential of employees generate innovation and thereby a competitive advantage for the company.

Originality/value –

This is the first paper that gives a detailed overview on the influential dimensions for the participation of employees on internal crowdsourcing. It investigates not only organizational but also technological factors. Furthermore, it is the first paper relying on semi-structured interviews.

Keywords Innovation, Internal Crowdsourcing, Participation, Platform

Content

List of Tables.....	IV
List of Figures	IV
1 Introduction	1
1.1 Research Background	1
1.2 Research Problem.....	2
1.3 Research Objectives.....	4
1.4 Research Contributions	5
1.5 Research Structure	7
2 Theoretical Foundation.....	8
2.1 Towards Internal Crowdsourcing.....	8
2.1.1 Innovation Fundamentals	8
2.1.2 Innovation Typologies.....	9
2.1.3 Innovation Process	12
2.1.4 Innovation Development towards Open Innovation	13
2.2 Internal Crowdsourcing.....	14
2.3 Role of Online Platforms.....	18
2.4 Antecedents for Participation in Internal Crowdsourcing	19
3 Research Methodology	24
3.1 Research Design.....	24
3.2 Data Collection.....	25
3.3 Data Analysis.....	28
3.4 Research Case	32
3.4.1 Organization Details.....	32
3.4.2 Internal Crowdsourcing at Sparkasse: S-Innovation	33
4 Results	36
4.1 A Priori Results.....	36
4.2 Directed Analysis Results.....	39
4.2.1 Corporate Culture	40
4.2.2 Incentives and Rewards.....	41
4.2.3 Leadership Style and Management Support.....	44
4.2.4 Environment and Resources.....	46
4.2.5 Technological Features	47
4.2.6 Other Categories.....	48

4.3	A Posteriori Results	51
4.4	Overview of Results	52
5	Discussion	55
6	Conclusion	61
6.1	Implications	62
6.1.1	Theoretical Implications	62
6.1.2	Practical Implications	63
6.2	Recommendations	65
6.3	Limitations and Future Research	66
	References	68
	Appendix	79

List of Tables

Table 1: Overview of related Crowdsourcing Frameworks	21
Table 2: Overview of Crowdsourcing Features	35
Table 3: A priori Results	37
Table 4: Directed Analysis Results	39
Table 5: A posteriori Results.....	52
Table 6: Overview of Influencing Tools and Measures.....	53

List of Figures

Figure 1: Innovation Typologies	11
Figure 2: Typology of Crowdsourcing Activities	16
Figure 3: Process on Crowdsourcing Platform	35
Figure 4: Overview of Influencing Factors	52

1 Introduction

1.1 Research Background

Innovation is permanently among the top business priorities of CEO's (Shelton and Percival, 2015; Andrew et al., 2010). It is the competence for developing prosperous innovations of any kind and for the long-term survival as well as the competitive advantage of a company (Hitt et al., 2000). According to Drucker (1985) it is hard to imagine that there exists any other topic more substantial to the competitive position of a company guaranteeing its future continuity than innovation. He claims that "knowledge-based innovation is the 'super-star' of entrepreneurship. It gets the publicity. It gets the money" (Drucker, 1985, p. 107).

Recent theoretical developments have revealed that companies are challenged more and more by a development towards shorter innovation cycles, rising costs for industrial research and development as well as the scarcity of resources, both human and non-human resources. These challenges in the search for new innovation strategies are strengthened by a trend towards the globalization of research, information and communication technologies as well as the potential of new organizational forms and business models (Gasman and Enkel, 2004).

As a consequence, only companies that expand their knowledge base have the chance to withstand the challenges and remain their competitive strength among their competitors by developing new innovation strategies, concluding from Drucker (1985). Today, one prominent way to increase the knowledge base is through the phenomenon of 'internal crowdsourcing' (Simula and Ahola, 2012). Crowdsourcing for ideas and innovations is a relatively new organizational process empowered by the development of social information and communication technologies. In crowdsourcing campaigns sponsors use an open call usually via internet platforms to leverage the analytical and creative potential of a larger group of people, from outside or inside a company (Estellés-Arolas and González-Ladrón-de-Guevara, 2012; Zuchowski et al., 2016). 'External crowdsourcing' with people outside the company has been investigated in literature intensively with organizations including SAP (Leimeister et al., 2009), Philips Healthcare (Ågerfalk and Fitzgerald, 2008) or LEGO (Schlagwein and Bjørn-Andersen, 2014). However, a new trend towards 'internal crowdsourcing', with employees representing the crowd that

contributes and develops ideas, has experienced a considerable increase in practice. This increase was followed by a first wave of research studies and papers. Researchers investigated internal crowdsourcing projects in organizations including IBM (Bailey and Horvitz, 2010; Muller et al., 2013), Deutsche Telekom (Rohrbeck et al., 2015) or Allianz (Benbya and Leidner, 2016).

1.2 Research Problem

Research on internal crowdsourcing constitutes a relatively new area. The existing research shows that external crowds proved they are able to outperform the knowledge of internal experts for certain problems on many occasions (Boudreau and Lakhani, 2013; Lüttgens et al., 2014 and Leimeister et al., 2009). Nevertheless, some researchers have demonstrated that an appropriate governance of the crowdsourcing process is a challenging threat (Boudreau and Lakhani, 2013; Jain, 2010; Spiegel et al., 2011). An external crowd that is not under direct control of a company and has no boundaries in its behavior either creates undesired outcomes or adverse results. In comparison, these challenges are reduced in internal crowdsourcing as organizations have more mechanisms to control the crowd (Chanal and Caron-Fasan, 2010; Howe, 2010).

Nevertheless, internal crowdsourcing involves a challenging pitfall that we will discuss at the center of this thesis. This challenge describes the potential lack of contributors participating on crowdsourcing platforms. Crowdsourcing usually believes in voluntary participation. Therefore, a critical mass which is essential for the development and evaluation of ideas cannot be guaranteed (Schenk & Guittard, 2011). This is a problem that needs to be tackled by organizations using internal or external crowdsourcing platforms.

Voluntary participation needs to be distinguished for both types. While in external crowdsourcing projects, the number of participants depends on how well the project is communicated to the external world, if the predetermined topic is of interest to many people and very often how the compensation is. In internal crowdsourcing, the organization already incorporates a knowledge base in its employees that it needs to uncover. An employee's participative behavior in crowdsourcing is described by how he shares creative ideas or how the available work time will be split between ordinary daily work and crowdsourcing activities (Simula and Vuori, 2012)

While external crowdsourcing has more of a temporary event character, internal crowdsourcing has the challenge of a more continuous process without a fixed ending. Therefore, a constant form of motivation and organizational structure is necessary. Organizations have more opportunities to influence the participants' behavior as they are in a direct relationship with their employees. In this thesis we will focus on how participation on internal crowdsourcing activities can be raised among employees, encouraging them to spend more of their work time on crowdsourcing.

To date, research has focused mainly on organizational dimensions on crowdsourcing platforms. Scholars especially lay a focus on governance mechanisms in external crowdsourcing. Despite the growing influence of technology, none of the existing research streams has investigated the influence of a technological dimension on crowdsourcing platforms (see Table 1). This thesis will add to the existing body of literature by examining the potential influence of a technological dimension on the participative behavior of employees. Thereby we combine the two streams of organizational and technological dimensions in our study.

Our motivation to solve the problem of low participation on internal crowdsourcing platforms stems from the fact that employees hold an enormous amount of knowledge within themselves that is very often not harvested for the benefit of the company or even their own good. By participating more on internal crowdsourcing platforms, employees help to improve the competitive position of a company through the insertion of knowledge in the form of own ideas or feedback on the ideas of others and thereby developing valuable innovation.

In order to solve the problem of low participation on internal crowdsourcing platforms, this thesis asks meaningful but understudied questions:

How can participation on internal crowdsourcing platforms be increased?

- a. Which factors hinder the participation of employees on the platform?
- b. Which factors improve the number of employees participating on the platforms?
- c. Which specific tools can organizations apply to increase participation?

In order to answer these questions, we conducted an empirical approach relying on a qualitative analysis to better understand the underlying dimensions for participation on internal crowdsourcing platforms. Ten semi-structured interviews with platform managers and ordinary employees from organizations of the Sparkasse group enabled a detailed understanding of supporting and hindering factors for the participation on the platform.

Sparkasse, one of the largest German financial institutes, has recognized the pressure for developing new innovation strategies years ago. The digitalization changed not only financial product offerings from existing financial institutes, but also the opportunity for startups offering well designed financial products even without possessing an own banking license. This development of fast product development and new market entrants can be observed across all industries. The need to adapt more quickly to dynamic environments and needs of customers by integrating more sources of knowledge to create product as well as process innovations led the Sparkasse to the integration of an internal crowdsourcing platform. This platform was developed by Table of Visions, an experienced crowdfunding and crowdsourcing IT-company. The Sparkasse recognized internal crowdsourcing platforms as a sufficient tool to generate ideas and innovations through the knowledge base of their own employees. Unfortunately, the participation of the employees fell short of the responsible persons' expectations. Not only the Sparkasse realized the problem of low participation, but also other organizations with different industry backgrounds according to the founders of Table of Visions.

1.3 Research Objectives

In line with the stated research questions the thesis pursues various objectives. The objectives of this research are manifold in their nature. These objectives reflect the procedure of our analysis as they are presented in a certain order.

First, we attempt to outline the development of innovation strategies towards internal crowdsourcing platforms as one potential option for organizations to generate innovations in this thesis. In the course of our analysis we seek to expose the current knowledge on external and internal crowdsourcing procedures and how they differentiate. Besides we pursue to analyze the relevance of technology, meaning the existence of certain features and the design of the platforms, and its influence on the participative behavior of employees on internal crowdsourcing platforms.

Second, we attempt to establish a concept for participation on internal crowdsourcing platforms by synthesizing discussions and models from various academic fields. Current literature asserts that the concept has a multidisciplinary and multidimensional nature. However, researchers appear to have no consensus on which and how many dimensions should be measured. Especially technological dimensions as drivers for participation are neglected entirely (see Table 1). Therefore, much more remains to be understood about the relevant influencing factors as well as the integration of a technological dimension as a new stream of research next to the organizational factors. This thesis investigates five dimensions potentially relevant for participation on internal crowdsourcing platforms, derived from an extensive literature review and research fields of interest: (i) corporate culture, (ii) incentives and rewards, (iii) leadership style and management support, (iv) environment and resources as well as (v) technological features.

Third, we endeavor to investigate the relevance of each of the five predefined dimensions as drivers for participation on internal crowdsourcing platforms. Additionally, we aim to explore if other dimensions have a positive influence on the participation of employees. In order to widen the picture of participation we attempt to understand what hinders employees in participating on these platforms at the same time. Thereby we try to create a two-dimensional approach.

Finally, we intend to explore explicit tools and measures that can be applied in practice for each dimension generated through interviews with employees using these platforms and platform managers that hold expert knowledge. Our objective is to provide prioritized recommendations to practitioners. Unlike previous studies, this thesis tries to develop and test theories that explain participative behavior among employees on internal crowdsourcing platforms in more detail. Yet, there has been a lack of both empirical and theoretical efforts to research specific tools and measures for practical use in that specific field of study.

1.4 Research Contributions

Pursuing the four research objectives, this thesis will generate theoretical as well as managerial implications. Taken together, this study can contribute to the understanding as to the management of internal crowdsourcing platforms.

For the *theoretical* contributions, first, this thesis suggests a conceptual framework that combines literature on participation on internal crowdsourcing platforms with similar research across various academic disciplines, such as organizational, social or technological science. The five dimensions from section 1.3 added by the dimension of communication are relevant for a higher participation. This framework provides a more systematic way to integrate employees into the innovation activities of a company and thereby exploiting the existing knowledge instead of solely relying on experts or external crowds (Simula and Vuori, 2012; Ford, 2001; Cohen et al., 1972).

Second, based on the developed framework, it seems that most of the earlier research has neglected the relevance of technological features. The two streams of organizational and technological dimensions are aggregated in one framework. Thus, this study extends the small amount of literature that has dealt with technology in similar fields, through a focus on the design or special features of an internal innovation platform.

Third, we add a qualitative empirical approach to the existing body of research. Through semi-structured interviews we understand the foundation of practical problems and directly ask participants for potential measures and tools to dissolve the lack of participation. Thus, we close an existing methodological gap, as previous literature relied on theoretical approaches (Kesting and Ulhøi's, 2010; Martins and Terblanche, 2003; Leimeister et al., 2009; Zuchowski et al., 2016) or secondary data (Jain, 2010; Zogaj and Bretschneider, 2014; Blohm et al., 2018).

Lastly, we contribute to existing theory by explicitly incorporating *communication* as a cornerstone of the framework for the participative behavior of employees on internal crowdsourcing platforms.

From a *managerial* perspective, our main contribution for practitioners derives from the framework we developed which is characterized by the fact that it not only presents theoretical dimensions, but also provides concrete recommendations for action in shape of organizational or social as well as technological tools. Managers of internal crowdsourcing platforms have a wide range of measures to increase the participation of employees. As practitioners now know that the six dimensions *corporate culture, incentives and rewards, leadership style and management support, environment and resources, technological features* and *communication* influence the participation, they have the opportunity to react faster to low levels of participation using specific counter

activities proposed in our lists of tools and measures for each dimension. Knowing both the fundamental dimensions and the specific tools will result in higher participation on the platform.

1.5 Research Structure

This thesis is structured as follows. First, we will provide insights on innovation basics such as terminology, typologies and the typical innovation process. Afterwards, we will continue by examining how innovation has undergone a development towards internal crowdsourcing over time and investigate the role of platforms. Subsequently, we close the theoretical foundation by introducing frameworks from similar fields of study. The dimensions of these frameworks serve as a foundation for our research and allow for a better understanding of previous research. Section 3 then moves on to detail the organization under investigation as well as their specific crowdsourcing process on the platform will be presented in order to better understand its peculiarities. Section 4 goes on to outline the research methodology. The research design, data collection process and data analysis will be examined in detail. The results of our analysis will be presented subsequently in section 5 before conducting a critical discussion of these in section 6. Finally, we subsume and discuss implications as well as limitations of our research in section 7.

2 Theoretical Foundation

In order to attain a profound understanding of the underlying concepts and theories that are fundamental for this study, a literature review containing relevant academic publications is conducted. The literature review is divided into three chapters that investigate the development of innovation behaviors towards internal crowdsourcing, factors influencing the participation in innovation and the role of platforms and the Web 2.0 in development of internal crowdsourcing.

2.1 Towards Internal Crowdsourcing

2.1.1 Innovation Fundamentals

In this chapter the development of innovation towards internal crowdsourcing will be investigated while reviewing various concepts of innovation. Fundamentals and different procedure of innovation are analyzed. In order to gain an understanding of the concepts used at a later stage, we must convey a common basis by introducing fundamentals of innovation. Over the past decades numerous definitions for the term *innovation* have appeared in literature. What unites nearly all of these definitions is the emphasis on ‘newness’ (Gupta et al., 2007) or ‘novelty’ (Deakins and Freel, 2009).

Among the simplest definitions is one from Drucker (1985, p. 31): “innovation is change that creates a new dimension of performance.” One of the first approaches towards innovation was conducted by Schumpeter (1939, p. 80) who presents innovation as “doing things differently.” His theory differs between five types of discrete innovation or change: the introduction of a new good or quality, a new method of production, the opening of a new market, the conquest of a new source of raw materials or half-manufactured goods and the carrying out of new organization of industry (Schumpeter, 1934). Many of these cornerstones established by Schumpeter can be recognized in the latest ‘Oslo Manual Guidelines for Collecting and Interpreting Innovation Data’ (OECD/Eurostat, 2018, p. 46f.): “An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).” Fundamental for this definition is that innovation differs from a new idea or invention as it requires implementation on the market or in a company. An innovation is further involved in some kind of value creation (OECD, 2018). In 2009

Baregheh et al. conducted a content analysis of 60 definitions of *innovation* in order to propose an integrative definition for organizational *innovation*. Regarding their findings, “Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace” (p. 1334).

Already in 1994, Reichert pointed out that a universal and uniform definition of the concept of innovation does not exist. The reason for that is primarily the lack of a self-contained, comprehensive theory of innovation. The afore-mentioned ideas of ‘newness’ or ‘novelty’ are relative concepts and therefore difficult to measure. The term *innovation* has experienced a loss of its meaning by a mis- and overuse in the management field (Keely, 2013). Additionally, a natural psychology of innovation resistance exists in everybody, from CEO to employees to customers. When the perceived risk of the innovation is high or a certain habit of a person is strong, then the innovation resistance is high. Depending on the impact of the innovation, innovation is often connected to uncertainty (Seth and Stellner, 1979). Many CEOs and senior managers feel intimidated by innovation as they associate it with high-risk, high-cost efforts that result in uncertain outcomes and do not guarantee returns (Kuczmarski, 1996).

Both the multitude of definitions and the difficulty in making the concept of innovation comprehensible present a challenge for the business world. Hence, innovation is both an opportunity and a risk. Chesbrough concentrates this understanding in a short phrase: “companies that do not innovate, die” (2006, p. 185). Innovation is crucial for a company’s survival but also to stay ahead of competition in order to generate profits. (Chesbrough, 2006).

2.1.2 Innovation Typologies

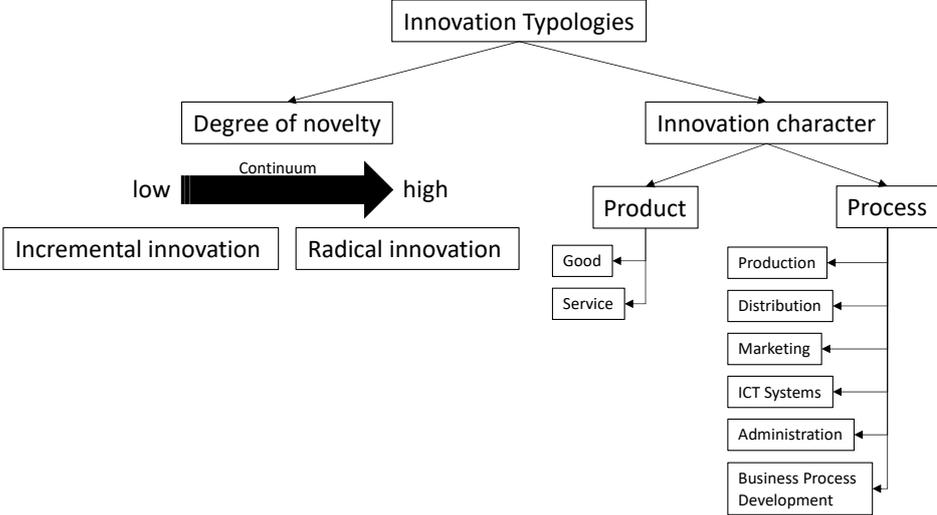
In innovation literature, various typologies exist to classify innovation. The two most common typologies for innovation focus on the *innovation character* or on the *degree of novelty* (see Figure 1). Many classifications are detailed extensions of the two. As the world has evolved into a more complex construct, it is not enough anymore to simply differentiate between product or process innovation (innovation character) or between radical and incremental innovation (degree of novelty).

Tidd et al. (2005) established a typology for the *innovation character* that distinguishes between the '4 P's of innovation' namely product (service) and process innovation, but also paradigm and position innovation. Paradigm innovation focuses on the underlying mental or business models that describe what the organization does to generate revenue. Position innovation deals with the changes in how the product or services are introduced to the market, concerning the strategy and marketing mix amongst others. Until 2018 the OECD (2005) have differentiated between product, process, marketing and organizational innovation. They realized that the business world has transformed into a more complex structure. Due to that development, the OECD published a new 4th edition of their widely accepted 'Guidelines for Collecting and Interpreting Innovation Data' (Oslo Manual) (2018). As mentioned beforehand, the OECD (2018) applied the basic concept as an initial starting point by distinguishing between product and process innovation but introduced subcategories for each of them. While product innovation is separated into goods and services, they introduce six subcategories for process innovation (production, distribution/logistics, marketing/sales, ICT systems, administration and business process development). Many of these innovations can be bundled, presenting characteristics that span more than one type. This is due to the complementarity between different types of innovations (O'Brien et al., 2015; Frenz and Lambert, 2012).

The second option to categorize innovation is by its *degree of novelty*. Schumpeter, who can be seen as one of the founding fathers of innovation, uses the term "spontaneous and discontinuous changes" (1934, p.65) for the kind of change that can be understood as *radical* innovation. Later Schumpeter defined these changes as the "process of creative destruction" (Schumpeter 1942, p.83). *Radical* innovations seek for a revolutionary change with a high degree of novelty and economic risk. *Incremental* innovations on the other side, also referred to as 'evolutionary innovations', usually occur in known fields of application and existing or related markets. Incremental innovations are characterized by a low degree of novelty and are therefore relatively risk-free. The result of incremental innovations are slight variations of existing products, services, practices or approaches. They are mostly improvements and adaptations (Damanpour, 1991; Dewar and Dutton, 1986; Ettlie et al., 1984; Vahs and Brem, 2013). Insights from organizational learning theories propose that successful radical innovation projects demand the capability of transforming prevailing knowledge, while incremental innovations depend upon the

capability of reinforcing or recombining prevailing knowledge (Danneels, 2002; Subramaniam and Youndt, 2005).

Figure 1: Innovation Typologies



(Source: own representation)

This dichotomy of innovation is relevant for management decisions, as they require different styles of leadership, organizational culture and structure as well as business processes. Not managing radical innovations correctly can result in a probability of failure of more than 90% but can lead to a much higher profitability at the same time (Küpper et al., 2013). However, other authors claim that the additive impact of incremental innovations can result in an equal influence on economic change as radical innovation (Lundvall, 2010). A firm’s dynamic capability to adapt to changes is determined by achieving a balance between its incremental innovation capability and radical innovation capability (Benner and Tushman, 2003; Ettlie et al., 1984).

When differentiating between those two concepts, we need to be aware that what matters is the perceived degree of novelty of the customer; it is a subjective perception where novelty is in the eye of the beholder (Tidd et al., 2005). Besides, radical and incremental innovation are two polar types on a continuum of innovation, where the distinction is not one of clear and hard categories (Dewar and Dutton, 1986; Hage, 1980). We have seen that for both, the *degree of novelty* and the *innovation character* it is often difficult to draw a clear line between different categories. It is the company’s duty to clarify its

boundaries for the individual types of innovation. This clarification has major relevance for the whole innovation management and other affected business units. Despite the multitude of existing typologies, often it is advantageous to simultaneously focus on different types of innovation to generate offerings that create greater economic impact and that are challenging to imitate (Keely, 2013).

2.1.3 Innovation Process

In this section, we unravel the complexity of the innovation process. To bring ideas to life, may they be for a product or process, radical or incremental, typically a certain process is performed, until the idea can be implemented. Complementary to the innovation typologies, the innovation process cannot be compiled into a single correct framework. The innovation process has evolved over the past decades due to changes in the economic environment and technology that require adaptations in its management (Rothwell, 1994).

An innovation distinguishes itself from an invention through successful implementation on the market. The creation of an innovation is naturally not a static act, but a process that encompasses various activities over time (Tidd et al., 2005). Numerous possibilities for the delimitation and designation of the phases exist in literature. The degree of differentiation ranges from two to 67 phases (Gabele, 1978; Gisser, 1965). The extent of the innovation process is determined by the activities with which the process begins or ends. Literature reveals a variance in these activities, demonstrated in the following: Myers and Marquis (1969) define ‘problem identification/idea generation’ as the start and ‘implementation’ as the end of the process, while Uhlmann (1978) defines ‘research’ as the start and ‘application’ as the end of the innovation process.

The majority of the existing theories can be traced back to three main phases. Theories with more phases usually represent a detailed differentiation of these three phases. The process comprises the following phases: search, selection and implementation (Utterback, 1971) or idea generation, problem solving and implementation as Tidd et al. (2005) formulated it. The ‘idea generation’ subprocess can be understood as the recognition of an idea and available resources, the definition of the field of research and the proposal of an idea. Many of the ideas generated miss the transition into the next phase due to incongruence with the firm’s strategic direction, a low feasibility of the idea or missing leadership support (Ahmed, 1998). In the second subprocess the ‘selection/problem

solving' ideas are reviewed, alternatives are developed and validated before a final alternative is selected. Finally, the invention will be introduced into the market, it will be 'produced'. With the diffusion into the market, the 'implementation' subprocess is completed and so is the entire innovation process (Utterback, 1971; Thom, 1980).

The process, as it is presented, corresponds more to an idealized idea than to the actual implementation in a company. We demonstrate a sequential process model, but in reality, it is more of an iterative nature, inside the whole process and the subprocesses. In addition, the subprocesses may overlap to some extent, which makes clear differentiation and identification difficult (Ahmed, 1998; Brockhoff 1999). But, understanding the innovation process means that companies can tackle their innovation problems faster and more accurately in the right phase. In this paper, we will lay a focus on the first two phases, the idea generation and the selection.

2.1.4 Innovation Development towards Open Innovation

In the business world today, generating ideas and transforming them into marketable products or services occurs under various conditions. While there are some entrepreneurs who have leaps of thought and flashes of inspiration that result in radical innovations which they commercialize in newly founded startups, companies cannot rely on these moments of employees but need to establish structures that promote idea generation (Smith, 2006). In the last decades, we have witnessed a major paradigm shift from *closed* to *open* innovation. *Closed* innovation describes the traditional phenomenon where ideas were generated in internal R&D laboratories by the company's own researchers. (Chesborough et al., 2006; Gassmann, 2006).

Open innovation is a renunciation from the classic innovation process and "is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively" (Chesborough, 2006, p. 1). According to Chesborough (2003), five major erosion factors exist that propel companies to follow the shift in paradigm and open up their innovation approach. (i) Skilled and highly experienced workers' growing mobility and availability as well as (ii) the rapidly increasing number of college and post-college trainings led to knowledge spill outs out of company's research labs. (iii) Additionally, the development towards greater presence of private venture capital creating new start-up firms that transferred external research into promising products, resulting in high value companies. (iv) The product life

cycle and so the shelf life has shortened for many products and services, which caused the R&D speed to be a critical factor when it comes to keeping a competitive advantage. (v) Lastly, suppliers' and customers' increasing knowledge base has put pressure on the closed innovation paradigm.

Irrespective of the strategy a company follows, open innovation comes with risks and internal barriers as study among 107 European SME's and large corporates has shown (Enkel et al., 2009). Most prominent risks are the loss of knowledge and higher coordination costs as well as loss of control and higher complexity. Besides, Enkel et al. discovered that finding a reasonable partner, the disproportion of daily business and innovation activities or the deficit in financial and time resources for open innovation activities are internal barriers. The reality in today's business world is not based upon a focus on pure open innovation but on companies that find the right balance between closed and open innovation according to their needs. Neither too much of one nor too much of the other leads to a promising result. Essential is the combination of all available tools to build products faster and to secure core competencies and intellectual property (Enkel et al., 2009). Adapted from Chesbrough (2003), it can be summarized that: "Not all the smart people work for us. We need to work with smart people inside and outside our company" (Enkel et al., 2009). The term *open innovation* is often associated with *crowdsourcing* in the broader sense, which we will deal with in the next chapter.

2.2 Internal Crowdsourcing

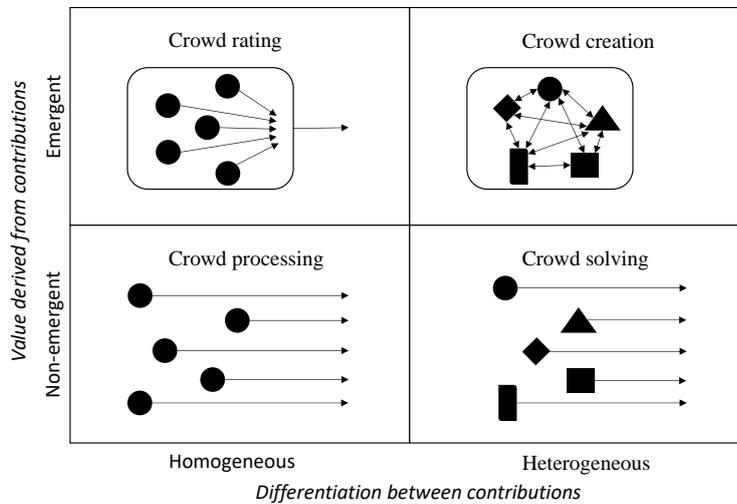
The idea of open innovation is to gather external knowledge sources and not solely rely on internally generated knowledge. Crowdsourcing can be utilized for open innovation initiatives but is not restricted to such. The focus of crowdsourcing is more on links between the firm and the crowd with its individuals, while the classic understanding of open innovation highlights links between firms (Schenk and Guittard, 2011). The term crowdsourcing was first coined by Howe (2006), a contributing editor for the 'Wired magazine', who defined it as "the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call" (Howe, 2008, p.1). More knowledge, competence and information needed for innovation is located outside the boundaries of the focal firm (Powell et al., 1996). Therefore, companies strive to leverage these intangible assets by capitalizing on the expertise of a large heterogenic group of

participants instead of small groups of experts and the associated collective wisdom, or in other words: the *wisdom of crowds*. These crowds are characterized by their independence, decentralization, diversity of opinion and aggregation of knowledge (Howe, 2006; Howe, 2008; Surowiecki, 2005).

Crowds can solve various types of crowdsourcing *tasks* in applying different *strategies*. Schenk and Guittard (2011) distinguish between simple, creative and complex *tasks*. *Simple tasks* require rather low cognitive abilities and involvement from the individuals. The added value of crowdsourcing in this case does not originate from individual abilities but from the low-cost realization on a large scale. Crowdsourcing for *complex tasks* on the contrary involves knowledge intensive activities and therefore relies on problem solving skills of individuals within the crowd. Crowdsourcing for *creative tasks* taps on the creative power of the crowds and the uniqueness of their ideas, without a focus on problem solving.

In order to solve different kind of tasks, Geiger et al. (2012) provide a distinction between four types of *strategies*, as they call it ‘information systems’, for the integrated design of crowdsourcing efforts (see Figure 2). First, *crowd processing* applies the idea of divide and conquer. Large jobs are divided into chunks of work (micro-tasks) and finally combining the individual contributions for a collective result. Second, *crowd rating* is the aggregation of an accurate number of votes that guarantees a reliable conclusion of the collective response. Collective assessments and a wide range of opinions are fundamentals of the ‘wisdom of crowds’ (Surowiecki, 2005). Third, *crowd solving* follows the approach that contributions are created out of diverse experiences, skills and knowledge resulting in a variety of complementary and alternative solutions for an existing problem or task. Finally, *crowd creation* builds on diverse crowds likewise. Individuals of the crowd deliver a variety of contributions which are bundled in one collective outcome. As these four systems are only archetypes, many crowdsourcing efforts apply a combination of them in reality (Geiger et al., 2012).

Figure 2: Typology of Crowdsourcing Activities



(Source: own representation based on Geiger et al., 2012)

When thinking of crowds that find solutions for certain tasks following a certain strategy, most scholars of early publications in the field of crowdsourcing thought of external crowds outside the boundaries of the company (Howe, 2006; 2008; Zhu et al., 2016; Estellés-Arolas and González-Ladrón-de-Guevara, 2012). Although many scholars have not stated it explicitly in their definitions of crowdsourcing, one can conclude by the frequent use of the term ‘outsourcing’ and the proposed examples that they focus solely on external crowds (Arolas and González-Ladrón-de-Guevara, 2012). Simula and Ahola (2012, p. 401) disagree with the idea that only external individuals can serve as a basis of a crowd and argue that “if an organization is sufficiently broad and heterogeneous; its employee ‘pool’ can also ‘act’ as a crowd.” Innovation is no longer restricted to the R&D department alone anymore, but open to all employees (Simula and Vuori, 2012). The terminology describing this phenomenon ranges from ‘enterprise crowdsourcing’ (Vukovic and Bartolini, 2010) to ‘intra-corporate crowdsourcing’ (Villarroel and Reis, 2010) to ‘internal crowdsourcing’ (Simula and Ahola, 2012). We use the term ‘internal crowdsourcing’ for our proceedings.

The concept of applying employee-driven innovation stems from the assumption that employees are recognized as ‘innovation capital’ or ‘innovation assets’, who possess hidden abilities (Ford, 2001; Cohen et al., 1972), which can be brought to the surface and be transformed into valuable information or products to the benefit of the employee and

the firm. These existing but hidden abilities are often unknown to both the firm and its employees and therefore underutilized resources. Employee innovations figure prominently in critical and everyday work practices and tasks, induced by social exchange (Kesting and Ulhøi, 2010). According to Lykourantzou et al. (2013) internal crowdsourcing activities concentrate more on complex and knowledge-intensive tasks. Typically, these tasks are of scientific or technological nature, which makes the inclusion of professional skills or a professional team with insights into the topic inevitable (Simula and Vuori, 2012). The complexity in these tasks require more coordination among crowd members than simple tasks, which can be facilitated through platforms (Skopik et al., 2012). Potential users involved as an external crowd are valuable in outlining *what* a new product shall do, but of less value in determining *how* it shall work (Ulrich and Eppinger, 2008; Poetz and Schreier, 2012). Especially when there is the need to handle confidential tasks in a company, a crowd consisting of employees might be more trustworthy and reliable than external individuals (Hirth et al., 2013). Furthermore, the company is aware of job roles, meaning the firm knows where to find the fitting skills at a certain point of time among the employees. Consequently, they have the advantage of assigning a crowdsourcing task to a certain employee that fulfills these criteria (Hetmank, 2014). However, not assigning these tasks to pre-defined employees according to their skills can result in increased serendipity (Simula and Vuori, 2012).

Although internal crowdsourcing overcomes several challenges of external crowdsourcing, such as legal aspects, i.e. intellectual property or data privacy, the integration of crowdsourcing activities and knowledge into existing structures (Hetmank, 2014), high transaction cost through extensive communication or control, and a clear request definition, especially for complex tasks that require professional knowledge, remain a threat to many organizations (Schenk and Guittard, 2011; Gassmann, 2012). Challenges like the clarification of the meaning of feedback, because without feedback contributors withdraw in the future, the activation of early adopters that stand as a role model to convince the followers or the slow adaption of business culture compared to fast changing technological possibilities, need to be solved in both, internal and external crowdsourcing (Simula and Vuori, 2012). Unique to internal crowdsourcing is the risk of not gathering the critical number of contributors due to a limited firm size and heterogeneity and thereby reducing non-obvious ideas or the perception among employees of crowdsourcing as additional activity instead of a partial substitute of their

current daily work (Hetmank, 2014; Simula and Vuori, 2012). Generally speaking, internal crowdsourcing faces the challenges of a culture for innovation, working attitude, a continuous and transparent communication and finally the motivation for participation of employees (Zhu et al., 2016).

In the technology-oriented surrounding we are living and working in right now, employee driven innovation as discussed above is far more than the dusty ‘idea-box approach’ of old times. Generating ideas through internal crowdsourcing is based on technology-driven platforms (Kesting and Ulhøi, 2010).

2.3 Role of Online Platforms

In recent years, a growing number of researches has investigated how the use of digital technologies such as wikis (Arazy et al., 2015), social media or innovation platforms (Benbya and Leidner, 2018; Leonardi, 2015) has changed the contribution of employees’ innovation within organizations. Leonardi (2015) developed a theory on communication visibility which suggest that social software in enterprises promotes employees’ metaknowledge, resulting in fewer knowledge duplicates and new services and products. The focus of these studies is solely on intra-organizational communication among employees that build on individuals’ self-estimated levels of innovativeness. They neglect both the *characteristics of content* accessed by employees through the enterprise social networking technologies and how employees *assign attention* for the different kinds of content. Nevertheless, the studies support the idea that digital technology strengthens interaction between employees and additionally provides them with information advantages that foster innovativeness of the individuals.

Thus, new information and communication technologies (ICT) are inevitably needed for crowdsourcing. The Web is a critical necessity for crowdsourcing as it can achieve reach, speed, anonymity, the ability to manage multiple forms of media content and the ability to communicate asynchronously (Brabham, 2008; Surowiecki, 2005). Through the use of the Internet and thereby promoted technologies, such as online platforms, a higher level of cooperation, coordination and generation of collective brainpower can be stimulated (Brabham, 2012). Especially Web 2.0-enabled social-interaction-software in the form of online platforms or communities contribute to active communication and general exchange in the field of crowdsourcing among employees (Hammon and Hippner, 2012; Zhu et al., 2016). “Web 2.0 is a connective and collaborative technological environment

that enables individuals to get involved in internet-mediated social participation, communication, and collaboration” (Zao and Zhu, 2014, p. 418). The impulse for the internal crowdsourcing movement via platforms arises from the Web 2.0, which converts passive browsers into active contributors. The use of crowdsourcing has experienced a remarkable increase in the last few years parallel to the Internet, Web 2.0 and web tools (Rouse, 2010). Internal crowdsourcing is a new problem-solving and production model based on a combination of social and technological aspects that exploits the versatile knowledge and abilities of a large group of employees contributing either independently or collaboratively towards a common objective (Hetmank, 2014).

Therefore, platforms, may they be based on web applications or be located on local servers, facilitate the participation of employees in internal crowdsourcing activities. Access to knowledge and the possibility to share knowledge within the company is given virtually at any time from any place in the world by the progress in technology. Still not all employees make use of the possibility of self-realization by participating on internal crowdsourcing platforms. In the following paragraph we want to assess aspects that have an influence on the participation of employees in innovation in general and maybe especially in internal crowdsourcing platform.

2.4 Antecedents for Participation in Internal Crowdsourcing

Since ‘wisdom of the crowd’ (Surowiecki, 2005) and collective intelligence (Gregg, 2010; Leimeister, 2010) constitute fundamental cornerstones of crowdsourcing, the generation of fruitful results through successful initiation and continuous development of crowdsourcing communities depend to a great extent on mass participation. Hence, it is of even greater importance to research what drives the crowd, and in this special case, what drives employees of a certain organization to participate in internal crowdsourcing activities (Zao and Zhu, 2014). For Stohl and Cheney (1996) “worker participation comprises organizational structures and processes designed to empower and enable employees to identify with organizational goals and to collaborate as control agents in activities that exceed minimum coordination efforts normally expected at work.” However, their definition does not concentrate on participation in innovation activities alone but follows a broader approach on the topic. Nevertheless, the explanations can be used to provide a basic understanding of participation.

Participation reflects a diversified set of perspectives and interest whereby individuals are empowered to disclose ideas, suggestions and concerns that go beyond the scope of an ordinary job description. This means that workers engage not only in their daily work, but in a greater context of activities, resulting in more access to information and knowledge about the organization, its products, services and processes. Often the rights of workers are broadened and responsibilities are increased (Stohl and Cheney, 2001). Participatory systems usually aim to promote supportiveness, openness, trust and a commitment to high performance goals (Redding, 1972). In organizations with high levels of employee participation it is expected that greater amounts of communication are needed. Participation can therefore be seen as a set of interactions. Especially in today's team-structured organizations, a great number of coordinative activities is required in order to handle complex and frequent interactions between employees (Stohl and Cheney, 2001).

The participation in organizational activities is being recognized more and more as a fundamental social right of employees being closely linked to democracy in the workplace in general (Manning, 1999). Stohl and Cheney (2001, p. 351) have identified six drivers that explain the upcoming interest in participative cultures, values, and everyday practices of organizations: (i) a disenchantment with bureaucracy, (ii) a desire to support employee security and autonomy, (iii) reactions to worker displacement and corporate outsourcing, (iv) new appreciation for the human side of enterprise, (v) the uneven effects of globalization, and (vi) the full-scale application of democratic values to work and organizations. Still, there is one topic in management that has not experienced a rise in participation: development and decisions about major innovations. Typically, this is still reserved for a smaller group in the organization, mainly top managers and special units. 'Ordinary' employees were often excluded from these activities, only a couple of years ago organizations started implementing internal crowdsourcing platforms that grant the employees a greater voice in the field of innovation, making use of hidden abilities and knowledge (Kesting and Ulhøi, 2010).

For internal crowdsourcing, participation allows employees to sharpen their creative skills; it encourages a sense of community and endows employees with more opportunities to be noticed throughout the whole organization. However, very often only a few employees seize these opportunities. Usually, only a small percentage of the participants in crowdsourcing is responsible for a large amount of generated ideas and

final outcomes. Participants reduce their activities or become permanently inactive after only a few submissions (Zao and Zhu, 2014). Therefore, it is of interest to investigate how to increase the *initial* and also the *continuous* participation of employees. By *initial* participation we mean that employees introduce ideas to the crowd via platform, while by *continuous* participation we mean that employees get active in evaluating, responding, rating, commenting and feedbacking ideas of others and their own with the intention to improve them.

Table 1 presents an overview on related research topics that gives an impression on the variance in wording of the topic. The papers do not precisely investigate dimensions relevant for the participation in internal crowdsourcing platforms, but related fields. Instead of ‘participation in internal crowdsourcing’ researchers explore constructs such as ‘activation-supporting components for ideas’, ‘supporters for creativity and innovation’, ‘innovative work behavior’ or ‘governance mechanisms for innovation’. Despite their different wording, a great overlap in dimensions’ surfaces. They mainly differ in the determination of which concept stands on top of the others and serves as a starting point for successful innovation result. For example, Martins and Terblanche (2003) use organizational culture as the top concept, while for other scholars it is one of many. Danks (2015) compiles a sampling of literature, comprising 16 papers, on factors that contribute to an innovation culture. To a great extent, these papers have similar dimensions as Martins and Terblanche (2003) or the other papers below.

Table 1: Overview of related Crowdsourcing Frameworks

Authors	Research Topic	Dimensions
Kesting and Ulhøi, 2010	Processes and drivers of employee-driven innovation	<ol style="list-style-type: none"> 1. Management support 2. Creation of environment for idea generation 3. Decision structure 4. Incentives 5. Corporate culture and climate
Leimeister et al., 2009	Activation-Supporting Components for IT-Based Ideas Competition	<ol style="list-style-type: none"> 1. Task specificity 2. Degree of idea elaboration 3. Organizational appearance 4. Timeline 5. Incentives 6. Target group
Martins and Terblanche, 2003	Determinants of organizational culture that support creativity and innovation	<ol style="list-style-type: none"> 1. Strategy (vision and mission) 2. Organization structure 3. Support mechanisms (rewards and resources) 4. Behavior that encourages Innovation 5. Communication

Blohm et al., 2018	Governance Mechanisms for Crowdsourcing Platforms	<ol style="list-style-type: none"> 1. Task definition 2. Task allocation 3. Quality assurance 4. Incentives 5. Qualification 6. Regulation
Zuchowski et al., 2016	Governance tasks in internal crowdsourcing	<ol style="list-style-type: none"> 1. Management of corporate culture and change 2. Incentive design 3. Task definition and Composition 4. Quality assurance 5. Community management 6. Management of regulations and legal implications
Dörner, 2012	Organizational determinants of innovative work behavior	<ol style="list-style-type: none"> 1. Supervisory behavior 2. Transformational leadership and leader-member exchange 3. Culture and climate 4. Support for innovation 5. Job autonomy 6. Job challenge 7. Task and goal interdependence
Zogaj and Bretschneider, 2014	Governance mechanisms for crowd solving	<ol style="list-style-type: none"> 1. Effective incentives 2. Task allocation 3. Quality assurance 4. Membership management 5. Precise set of regulations/agreements 6. Crowd qualification
Jain, 2010	Governance Mechanisms in Open Source Software Development	<ol style="list-style-type: none"> 1. Membership management 2. Rules and institution 3. Reputation 4. Monitoring and sanction 5. Leadership 6. Coordination 7. Task decomposition 8. Decision making

(Source: own representation)

In the following, we will determine a number of factors that serve as cornerstones for our subsequent analysis. We choose the framework of Kesting and Ulhøi (2010) as a foundation for our qualitative research, which we will conduct in the form of interviews. The framework of Kesting and Ulhøi (2010) is chosen as their research topic is closest to the one discussed here. In their research they concentrate on the employees as the internal crowd, in comparison to most of the other frameworks, which concentrate on broader topics such as innovative work behavior (Dörner, 2012) or open source software development Zogaj and Bretschneider, 2014). Four of the eight frameworks deal rather with governance mechanisms (Martins and Terblanche, 2003; Blohm et al., 2008; Zuchowski et al., 2016; Zogaj and Bretschneider, 2014; Jain, 2010), but not specifically

with participation or the increase of knowledge input from employees. We see governance mechanisms more as a strategy to keep a system running as to actively increase the use of it.

As Hetmank (2014) pointed out, internal crowdsourcing is a model based on (i) social and individual aspects, such as motivational factors, (ii) technological aspects, such as the utilization and configuration of modern ICT systems and (iii) organizational aspects, such as the alignment of crowdsourcing goals with corporate culture. Due to the upcoming importance of technology in today's business world we included it as an additional factor for our investigations.

Our preliminary framework might not cover 'participation in internal crowdsourcing platforms' to the fullest extent by now, but we provide the opportunity for participants to adapt it by their elaborations. However, the framework recognizes key activities and drivers for employee participation derived from literature. The framework only serves as a starting point for our analysis. It can be added by new factors or be reduced by the predetermined factors during and after the interviews. Abstraction is necessary to a certain extent at this point to generate a comprehensible framework and to avoid getting lost in complexity.

In the following, we will focus on these five dimensions serving as cornerstones of our subsequent analysis regarding the participation on internal crowdsourcing platforms, namely:

1. Corporate culture
2. Incentives and rewards
3. Environment and resources and
4. Leadership style and management support
5. Technological features

3 Research Methodology

3.1 Research Design

This paper examines the complexities surrounding the process of employees participating on internal crowdsourcing platforms. The research objective is to explore general factors influencing the participation of employees on these platforms and to identify a set of practical options to adopt these factors in the firm. This study is exploratory in the sense that it tries to determine the fundamental cornerstones influencing participation on the one hand, while on the other hand it is of a descriptive nature as it attempts to provide an overview of possible strategies for applying the superior cornerstones in the firm (Yin, 2003; Saunders et al., 2009).

In our research we will make use of an empirical approach in order to understand practical problems and will not purely rely on theoretical research. We start with a literature review to explore the major theories, concepts, models and frameworks based on which we will later build on a foundation for our qualitative research. Due to the fact that crowd innovation, especially when the crowd consists of the employees of a company interacting on internal platforms, is a relatively new topic in research and practice, our study will be based on qualitative research (Creswell, 1994). Dey (1993) argues that “the more ambiguous and elastic our concepts, the less possible it is to quantify our data in a meaningful way” (p.28). According to Bhattacharjee (2012) the focus of qualitative analysis lies in sense making and understanding a phenomenon, rather than predicting or explaining which is the ultimate goal of quantitative research. As we try to explore and understand the relevant factors of influence, a qualitative approach seems to be appropriate.

The qualitative research in the form of case studies aims at identifying detailed reasons for a greater participation of employees in crowd innovation activities. “A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (Yin, 2003, p. 13). As we are willing to understand personal motivation of employees, the approach requires deeper involvement with the persons affected to extract a detailed and profound understanding (Kaplan & Orlikowski, 2013). This field of

research is still at its beginning and results seem difficult to measure; hence we build our research on case studies.

In order to guarantee validity of the theory generation and ensure granularity of detail we conduct an embedded single-case study with multiple units of analysis (Yin, 2003). In the course of the analysis we investigate eight different organizations that all operate under the umbrella of a parent organization with more or less the same software, except some minor adaptations. The focus lies on a single-case study as we are willing to test and further develop a pre-formulated theory (Yin, 2003).

Based on the insights gained from the literature review we will conduct qualitative research and therefore collect qualitative data by means of semi-structured interviews. Interviews will be held with the employees of the various organizations. The interview guideline is mainly built upon theory. It contains open-ended question for the interviewee to freely elaborate on any relevant topic and more detailed questions on predetermined categories from theory. The data generated through these interviews undergoes a content analysis following procedures of Mayring (2010) and Hsieh & Shannon (2005). Our content analysis is focused on qualitative aspects but will be added by quantitative scores to support the researcher's findings.

The researcher is experienced in this field of study due to extensive involvement during his studies and practical experience in the working environment of crowdsourcing, the financial sector as well as idea and quality management (Yin, 2003). Equipped with methodological and technological knowledge, we will give a detailed overview in the following two paragraphs on how data was collected, the sampling of participants and how data was analyzed.

3.2 Data Collection

Data for this research was collected through ten semi-structured interviews with employees from eight different organizations as the primary sources. Each of these eight organizations represents one embedded unit of analysis within the case (Yin, 2003). This large number of embedded units shall guarantee validity for the development of the theory, as independent feedback is guaranteed. All participating organizations operate their own platform. Ten interviews with only eight organizations results from the fact that three of the ten employees are situated within the same organization. Of the ten

interviewees, four were female and six were male. The interviews were conducted with eight platform managers and two non-platform managers, meaning regular employees. The focus was on platform managers, because they are experts in the field as the knowledge about the crowdsourcing product and relevant processes concentrates on them, but at the same time they can also submit ideas on the platform as ordinary employees. The two non-platform managers were interviewed to validate the answers.

The interviewees were randomly sampled to the extent that the platform managers of all organizations inside the organizational group that use the crowdsourcing software were contacted by the responsible person from the parent organization, who organizes the distribution and development of the platform within the group. They were all asked to voluntarily participate in the interviews and they were asked whether they knew other employees, who would like to participate in the study. Currently 40 organizations of the group have adopted the crowdsourcing software originally developed by Table of Visions. Eight participating organizations represent one fifth of the 40 organizations that have the platform in use.

The approach of semi-structured interviews allows us to flexibly integrate relevant topics and pieces of information that were not considered when composing the questionnaire. It provides the opportunity for the interviewee to answer openly and concentrate on what he considers important. We want to find out why employees participate so little in innovation activities and learn about their personal reasons for not participating, which might be extremely diverse. The interviews will all be semi-structured, starting with the same set of questions. There will be more open-ended questions in the beginning, followed by more precise questions as more information emerges, which goes in hand with the story-telling approach of Mantere (2007). Open questions guarantee an inductive approach.

Before the interviews, all participants received an Information Sheet (Appendix B) explaining them the overall topic, procedures and duration, potential risks and benefits and terms of confidentiality. The interviewees were only contacted after the Ethics Committee of the university has approved the research project and the procedures of the qualitative research. The participants were asked to sign an Informed Consent (Appendix C), a document that informs them of their rights and confirms their participation. Except for one of the ten participants, all agreed that the interviews were audiotaped.

The interview guideline not only fulfils a controlling and structuring function, but also ensures the comparability of the data and supports the generation of hypotheses (Miosch, 2015). It can be subdivided in different phases. In the ‘warm-up phase’, questions were asked as openly and broadly as possible in order to encourage the interviewees to speak openly. In the ‘main part’ of the interview, the research-relevant topics were discussed in more detail on the basis of the predefined factors from the literature review. In order to make the introduction to the subject areas as easy as possible, the main section was divided into five thematic blocks, each discussing one of the factors. The ‘final phase’ was used to reflect on the interview and to ask whether the interviewee wanted to add something that was not addressed during the interview. In the following we present an excerpt of the issues that were covered in the semi-structured interview guideline:

Warm-up part:

- The perceived understanding of internal crowdsourcing (for instance: ‘What comes to your mind when you think of internal crowdsourcing’)
- The experiences of the participant on the platform (for instance: ‘How was your latest participation in innovation/ an innovation project?’)

Main part:

- The participant’s general idea of what supports and hinders participation (for instance: ‘In your opinion, what factors and conditions are important to increase participation of employees on the crowdsourcing platform?’ and ‘What do you think hinders participation on the platform currently?’)
- The relevance of corporate culture (for instance: ‘Do you believe corporate culture could influence participation? Why? How?’)
- The relevance of incentives and rewards (for instance: ‘What kind of incentives or rewards would motivate you most?’ and ‘Does intrinsic or extrinsic motivation work better?’)
- The relevance of the environment and resources (for instance: ‘Are there resources that should be provided to employees that would stimulate participation and are not sufficiently available?’)
- The relevance of management support (for instance: ‘What kind of leader/leadership style would motivate employees to participate?’ and ‘By which activities could management level support employees in their participation?’)

- The relevance of technological issues (for instance: ‘What are technological features and tools that come to your mind that could increase participation?’)
- The relevance of other factors (for instance: ‘After having discussed various factors that influence participation, do any other factors come to your mind?’)

Final part:

- The participant’s opinion on the most influential factors for participation (for instance: ‘Summarizing the interview, what do you think are the most critical factors for a higher participation on platforms?’)

All interviews were conducted in German, as it was easier for the participants to freely elaborate on that specific topic in their mother tongue and as it is the daily business language for them and the majority of the organization’s employees. Due to the fact that the participants were situated in regional organizations all over Germany, six of the ten interviewees were contacted via phone, while the other four were face to face interviews. The interviews lasted between 39 and 69 minutes with an average duration of 51 minutes per interview. Nine interviews were transcribed verbatim after being tape recorded (Poland, 1995), for which permission was granted by the participants in the Informed Consent. The last interview was followed by handwritten notes of the interviewer.

Furthermore, structured data in the form of annual reports, company presentations, news articles, survey and other documents were collected to create a holistic picture of the organization, its processes and culture. By using structured and unstructured data, a more comprehensive view is created in this study through triangulation of multiple methods (Dul & Hak, 2007; Yin, 2003).

3.3 Data Analysis

In comparison to quantitative data, which delivers hard numbers, qualitative data is usually based on an interpretative philosophy. Furthermore qualitative data distinguishes from quantitative data (in brackets) as it is “based on meanings expressed through words” (versus through numbers), “collection results in non-standardised data requiring classification into categories” (versus numerical and standardised data) and “analysis conducted through the use of conceptualization” (versus use of diagrams and statistics) (Saunders et al., 2009, p. 482). As a result of the diverse nature of qualitative data, a real standardized procedure for data analysis does not exist (Saunders et al. 2009).

Nevertheless, certain procedures can be used to analyze the data and reduce subjective influence. But, before data can be thoroughly analyzed, it needs to be prepared by transcribing the semi-structured interviews.

Eisenhardt declares that "analyzing data is the heart of building theory from case studies, but it is both the most difficult and the least codified part of the process" (1989, p.539). In our research, we combine elements of deductive and inductive research approaches to analyze the qualitative data (Saunders et al. 2009). The two approaches are embedded in the framework of a content analysis. According to Berelson, who was a pioneer in the field, as he published the first monograph on the topic, defined content analysis like this: "Content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication" (1952, p.18). He can be regarded as a representative of the classical or quantitative content analysis, in which the number of occurrences per category is counted (Kohlbacher, 2006).

Qualitative content analysis, in comparison to that, exceeds the sheer counting of occurrences of words or phrases by studying language profoundly with the aim of organizing or classifying substantial amounts of text with similar meanings into a concentrated number of categories (Weber, 1990). The categories generated with qualitative content analysis cannot only condense explicit communication, but also inferred communication (Hsieh & Shannon, 2005). Mayring (2000) defines qualitative content analysis as "an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules and step-by-step models, without rash quantification". He distinguished two kinds of procedures, the inductive category development and the deductive category application.

A deductive content analysis is recommended to test an existing theory that was simply developed through literature review in a different surrounding, in a different field. Further, it could be used to investigate categories with regard to different time periods. An inductive content analysis on the other side is useful when no previous studies on the subject exist or when the knowledge might be inchoate, especially for a certain field of study (Elo & Kyngäs, 2008). Our decision for a deductive approach stems from the fact that we have founded the majority of the interview questions on predetermined categories from existing literature. The inductive approach results from the idea, that the participants have the opportunity to elaborate on any subject that is relevant for answering the research

question at the beginning of the interview, before revealing any predetermined factors or categories to them. Stemler (2001) speaks of emergent (inductive) and a priori (deductive) coding, when distinguishing these two approaches.

Other authors, such as Hsieh and Shannon (2005), do not draw such a clear line between inductive and deductive qualitative content analysis and therefore differ significantly from Mayring. They differentiate between three approaches to qualitative content analysis. (i) Conventional content analysis, where codes are defined during data analysis, as in inductive content analysis. (ii) Directed content analysis, where codes are defined in advance by theory but also during data analysis. Here it is stated more clearly than in Mayring's procedure that unassigned text passages, that do not fit to one of the predefined categories, can be formed into new categories. It is somehow a deductive approach with inductive elements. (iii) Summative content analysis, which is based on keywords that are defined before and during the analysis.

In our approach, we are closest to the directed content analysis of Hsieh and Shannon (2005). The directed content analysis functions as follows. First, researchers identify key variables or concepts as their initial categories based upon existing theory and prior research (Potter & Levine-Donnerstein, 1999). Then, the researcher generates operational definitions for the categories based on the theory in order to clearly delineate different concepts. When data is gathered mainly through interviews, an open-ended question should be followed by detailed questions that refer to the predetermined categories. Next, coding can start immediately following the existing codes or categories. Data that cannot spontaneously be assigned to any of the existing categories will be analyzed later to determine if they fit into any of the existing categories or if a new category needs to be established. The results of the directed content analysis generate supporting or non-supporting results of a theory. Results will be backed by quantitative measures such as rank order comparisons of frequency or percent of supporting versus non-supporting codes (Hsieh and Shannon, 2005).

Content analysis as proposed can be a sensible procedure for the description and discovery of various centers of attentions from individuals, groups, institutions and other social surroundings (Weber, 1990). The U.S. General Accounting Office (1996) argues that this technique provides the opportunity to scan, arrange and analyze great amounts of data in a relatively easy way with a systematic approach. Krippendorff (1980) states

that “much content analysis research is motivated by the search for techniques to infer from symbolic data what would be either too costly, no longer possible, or too obtrusive by the use of other techniques” (p. 51).

The process of coding, as the groundwork of our data analysis, was supported by computer aided qualitative data analysis software (CAQDAS). In our case, the software MAXQDA helped in making the analysis clearer. Such programs are useful for (i) the marking of text components and the marking with a code, (ii) the compilation of all quotations per coding, (iii) tracing selected citations back to their context and (iv) search for central terms in the interview texts (Mayring, 1994).

In the following, we present a short summary of the data analysis procedure: We start with an open question to give the interviewee the chance to elaborate freely on all topics. This represents the inductive element of our analysis. Then, predetermined factors from the previously formulated theory as well as factors of interest will be used for our guiding questions. This step constitutes the deductive or directed approach. Subsequently, the interviewee is given the opportunity to summarize the most important factors in his opinion. The interviewees are questioned about relevant factors that influence participation on internal crowdsourcing platforms and about how they actually adopt it in their company. Thereby we provide a theoretical framework added by alternatives for action.

In order to guarantee the trustworthiness of our results various strategies have been applied. Generally, validation in qualitative research is obtained through the use of multiple sources of data, theories, methods or investigators (Erlandson, Harris, Skipper, & Allen, 1993; Stemler, 2001). When concentrating on qualitative content analysis in a case study research, we can use triangulation in two different ways. First, we use different methods and procedures by integrating qualitative as well as quantitative elements in the analysis to achieve a higher validity. Second, Kohlbacher (2006) argues that triangulation is already created by applying a qualitative content analysis as a method of analysis for a purpose (case study research) for which it has not been developed originally. Before assembling the interview guideline, two experts of Table of Visions were asked to approve the factors selected for further investigation. They confirmed the researcher’s choice, which resulted from theory and fields of interest, whereby face validity was given.

In addition to these points, reliability is increased by illustrating a clear relationship between data and results, therefore the process of analysis is presented as detailed as possible, supporting the results with appendices and tables (Polit & Beck, 2004; Elo & Kyngäs, 2008). Also, participants were asked to summarize their elaborations by pointing out the most important factors in their opinion. Thereby, they got the chance to reassess what has been discussed and we create a condensed result of the interview. This step can be classified as a tool of member checking (Birt et al., 2016). Further, different groups of employees, normal employees and platform managers, participated in the interviews to validate the results.

3.4 Research Case

The following sections are intended to provide an insight into the structures and processes of the investigated organization Sparkasse itself and the internal crowdsourcing platform in use. Some of the insights presented in this chapter have been generated through extensive use of the platform.

3.4.1 Organization Details

The Sparkassen-Finanzgruppe is the largest credit institution group in Germany. Its particular strength lies in the locally anchored business model of the Sparkassen and in the close cooperation with its 540 member institutes in a strong alliance. The Deutsche Sparkassen- und Giroverband (DSGV), the umbrella organization of the Sparkassen-Finanzgruppe, represents the interests of the 540 member institutes composed as follows, 385 Sparkassen (savings bank), six Landesbanken (regional state bank) and the DekaBank (investment bank) as well as eight Landesbausparkassen (regional home loan bank), eleven insurance groups of the Sparkassen and numerous other financial service companies (Deutscher Sparkassen und Giroverband e. V., 2017).

Generally, the Sparkassen are municipally owned institutions in a public legal form. Within the framework of the regional principle, they concentrate their presence and their business activities in a traditional home region. They are independent, managed decentrally and focus on growth by its own efforts. With its 385 institutes, over 13,000 branch offices and around 210,000 employees, Sparkassen are represented throughout Germany (Deutscher Sparkassen und Giroverband e. V., 2017).

The Sparkassen-Finanzportal (SFP) is the central service provider for communication and digital services in the Sparkassen-Finanzgruppe. The SFP is the driving force behind the digital business and the central partner for communication campaigns from a single source inside the financial group. With more than 300 employees, SFP connects all communication disciplines and develops integrated solutions for the Sparkassen, associations and alliance partners, reaching from strategy to evaluation, from content to action, from concept to implementation. It develops tools and software internally and with external partners that can be integrated by all of the 540 member institutes (Sparkassen-Finanzportal, 2019a).

3.4.2 Internal Crowdsourcing at Sparkasse: S-Innovation

The internal crowdsourcing platform *S-Innovation* falls within the area of responsibility of the SFP as the superior organizational unit of all Sparkassen. Together with Table of Visions, experts in the fields of crowdfunding, crowdsourcing, open innovation and idea management, they developed a white-label solution for an internal crowdsourcing platform. *S-Innovation* is implemented in the intranets of the different Sparkassen, it is branded and slightly modified to the special needs and wishes. So far, around 40 of the 385 Sparkassen have integrated their own *S-Innovation*, covering roughly 40.000 employees. As we have learned before, a functioning crowdsourcing platform depends on the ‘wisdom of the crowd’ (Surowiecki, 2005) and 40.000 employees constitute a great crowd, capable of contributing a great deal of knowledge.

The different Sparkassen obtain the *S-Innovation* software from the SFP as a single point of contact. This means, that Table of Visions provide a platform to the SFP, which distributes it to the various Sparkassen. The particular Sparkassen can slightly adapt the platform to their needs. Each Sparkasse has at least one ‘platform manager’, depending on the size of the Sparkasse, who is responsible for the implementation, viability and disclosure of the platform. The platform manager’s job is the successful technological integration of the platform on the intranet on the one hand and the active utilization, in the form of contributing and developing ideas, by participative employees on the other hand. To achieve that goal, platform managers might draw on platform specific or organizational improvements.

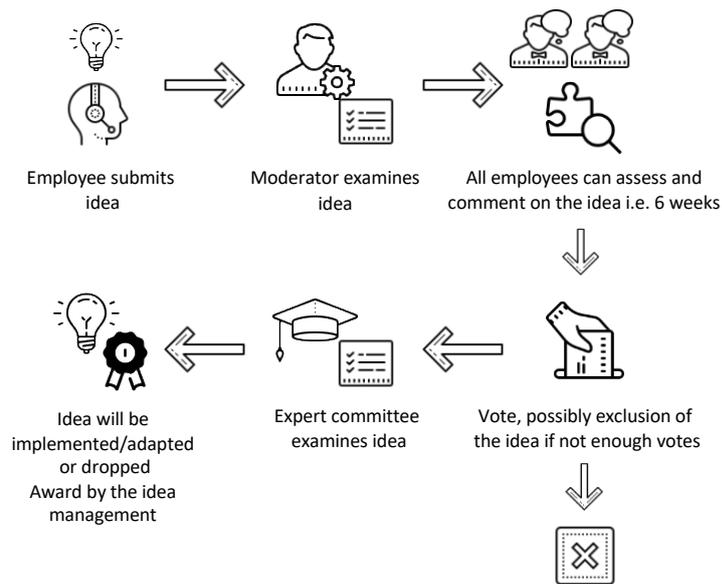
S-Innovation is a platform for idea and innovation management. The basic idea of *S-Innovation* is the open and collaborative exchange of ideas on a transparent platform.

Accordingly, all users of the platform have equal rights and can submit ideas and view, evaluate and comment on all published ideas and recommend them to others. With S-Innovation, employees submit ideas that are discussed and evaluated according to the "crowdsourcing" principle so that they can be further developed. The following goals have been formulated by the company itself: (i) identifying the need for change at an early stage (ii) permanent maintenance of market position (iii) using swarm intelligence: making good ideas better (iv) employee motivation through participation (Sparkassen-Finanzportal, 2019a).

How does the process work in detail?

Before the employees get started, they need to sign in to the intranet of their Sparkasse, where they find the *S-Innovation* internal crowdsourcing platform. After opening the platform, they can discover published ideas of other employees or they can continue by contributing their own ideas. The whole process of submitting an idea, developing that idea with colleagues and finally deciding for a certain idea works as follows (see Figure 3). First, the employee submits the idea, including descriptions, pictures and other attachments. Then, a platform moderator examines the submission for formal and content criteria. After the approval, the idea is published on the platform and all employees can comment on and evaluate it. Usually ideas are published for a certain period of time, which is determined by the platform managers and valid for all ideas. The predetermined duration sets a boundary that allows for comparability between the ideas. After the time has expired, the platform manager reviews the ratings and comments. Sometimes only ideas that receive a certain rating or reach a certain number of comments are further processed. These indicators are determined in advance by the manager. Next, the idea is reviewed by a panel of experts. The expert panel consisting of one or several surveyors evaluates the feasibility and if an added value is created. In case of a positive assessment, the idea will be further developed and implemented (Sparkassen-Finanzportal, 2019b).

Figure 3: Process on Crowdsourcing Platform



(Source: own representation based on Intranet Demo, 2019)

Features of the Platform

In the following, an overview of the main features and tools of the platform *S-Innovation* is presented that provides an impression on the possibilities employees have (see Table 2). Four categories are distinguished: (i) *idea submission*, which includes all details and information an employee can provide, (ii) *involvement with other ideas*, which explains how employees can participate in ideas of others, (iii) *discover ideas*, which describes how employees can find other interesting ideas and (iv) *profile*, that provides information on the employee (Intranet Demo, 2019).

Table 2: Overview of Crowdsourcing Features

Idea Submission	Discover Ideas	Involvement with other Ideas	Profile
Title	Search for categories	Rating (stars or likes)	Name
Short description	Search for idea status	Comment	Position
Description	Search for idea-ID	Share idea via mail	Email
Advantages of the idea	Sort by:	Put on watchlist	Phone
Tags/keywords	Publication date	Contact idea generator	Picture
Links	Remaining term		Notifications Selection
Connect other participants	Number of comments		See own ideas
Select anonymity	Number of ratings		See submitted ideas (but not published)
Attachments (pics, docs etc.)	Average rating		See evaluated ideas
			See watchlist

(Source: own representation)

4 Results

In the following section, we will present the results that we carefully collected in the forms of interviews and documentary evidence. For some of the participants, working with the platform is daily business, as they are platform managers who interact with it day by day. For other participants it is not daily work but simply the tool to propose new ideas and suggestions for improvements of existing products or processes. This chapter is divided into three parts. First, the a priori results that represent the results of the free elaboration of the participants. Second, the directed analysis results, where we asked for predetermined categories in more detail. And third, the posteriori summary, where participants were asked for the most important factors influencing participation on crowdsourcing platforms from their perspective.

4.1 A Priori Results

In this paragraph, we want to demonstrate the results generated through our open-ended question at the beginning of our interviews. The interviewees were asked to freely elaborate on any factors that support as well as hinder the participation of employees on crowdsourcing platforms, especially experienced themselves. On the one hand, we will try to create categories based on the qualitative content analysis and possibly add to the predetermined categories, on the other hand we will demonstrate explicit examples. We start with a quantitative content analysis reflecting numeric mentions of interviewees.

In total, 83 passages were marked in the texts as hindering factors of employee participation on internal crowdsourcing platforms. In comparison to that, 68 passages were marked as supporting factors. Among the 68 supporting marks, several can be assigned to the dimensions defined in chapter 2.4 (see p. 15). 15 marks can be assigned to corporate culture, 7 to incentives and rewards, 6 to technology features, 6 to environment and resources and 4 to leadership style and management support. The remaining 30 marks were initially marked as “others” and need to be coded and categorized subsequently. In Table 3, the quantitative results before qualitative coding are presented.

Table 3: A priori Results

Categories	Number of Marks in Text
Hindering	83
Supporting	68
Corporate culture	15
Incentives and rewards	7
Technological features	6
Environment and resources	6
Leadership style and management support	4
Other categories	30

(Source: own representation)

We will start providing examples and a summary for the hindering factors followed by the supporting factors, which will be separated in predetermined factors and others. We will provide exemplary quotes for the most relevant and most frequently mentioned categories.

Hindering Factors:

One of the major factors that was mentioned by the participants was the fear of criticism, from colleagues as well as superiors. They articulated that they were scared of justifying themselves for bad or unnecessary ideas and the time they were dealing with the platform instead of following their daily work. One participant concluded:

There is the fear in two variations, on the one hand that the superior says that my employee has nothing better to do than to deal with some idea. That's one thing, I think, does he have not enough to do so that thoughts like that come up. The other is, I think, what colleagues then think of an idea being submitted.

Another important point when thinking of hindering factors is that companies do not take their time for innovation activities. Very often not enough time and money is assigned to innovation resulting in the fact that companies only focus on their daily business instead of important strategic innovation topics. One participant expressed himself in an abstract way on that issue:

And then it is not primarily a question of sharpening the saw, but of sawing faster. And if an employee comes and says, I would like to sharpen more, then it can happen to him or possibly also happens to him that they say, interesting idea but now it's time to saw, we sharpen the saw later.

It was often mentioned that employees lose their motivation to participate on the platform especially when an idea was rejected. This had very bad influence on the participation especially when there was no clear communication with the idea provider on the reason for the rejection.

In any case, I have often experienced that sometimes even from those of the specialist departments who then evaluate the ideas, there is no constructive approach, but according to the motto: that's not how it is. That you experience a bit of frustration because you simply did not get a reasonable answer in that sense or got answers that are not comprehensible.

Yet another problem that came up, was the relatively high age of the workforce, although exact number were not stated. One of the participants recognized a clear difference between younger and older colleagues and described it as follows:

I would now basically say that to a certain extent it also depends on generations. You can already see that the younger generation has rather less inhibitions in setting up something that everyone can read or see. You already notice that you often get suggestions from trainees or young employees, because this topic is already familiar to them thanks to social media and because the inhibition threshold is a bit lower.

Hereafter, all hindering factors sorted by number of mentions are summarized:

- Fear of criticism and justification: towards boss or colleagues for unqualified content or wasted time
- No time, resources, budget for innovation: only everyday business, no strategy
- Rejection and lack of realization of ideas
- Missing feedback: vague communication for rejected ideas from the evaluators
- Complicated sign-on no single sign-on available
- No remote participation: possible only from workplace
- IT service provider cannot implement or declines ideas: protracted processes until decision is made
- Fear of more work
- Missing support from the executives for innovation
- Separation between operations and sales: different cultures inside the company

- Low participation of older workforce: fear of change and lack of knowledge
- Hierarchical structures
- Fear of hurting the feelings of others through negative comments and ratings

Supporting Factors:

Among the supporting factors that were mentioned by the interviewees, we found our predetermined and some other relevant factors as the table above has already shown. The a priori results for the supporting factors will be included in the directed analysis results (see 5.2) in order not to be repetitive. In the directed analysis results, we just went into more detail and asked again for the predetermined categories again, while in the a priori results the interviewees elaborated freely on influencing factors for the participation of employees on the crowdsourcing platforms.

4.2 Directed Analysis Results

In this chapter, we summarize the results of the categories that we predetermined through theory and fields of interest. These categories were evaluated as relevant and interesting factors in the participation of employees on internal crowdsourcing platforms from two experts from Table of Visions, who program and design such platforms for organizations. We provide an overview of the general perception on a category of the interviewees supported by quantitative scores as well as qualitative responses for or against certain standpoints. Further, we will list potential tools for implementation in a company for each category. Below, in Table 4, an overview of the number of marks per category in the interviews can be found.

Table 4: Directed Analysis Results

Categories	Number of Marks in Text
Corporate culture	26
Incentives and rewards	95
Leadership style and management support	46
Environment and resources	39
Technological features	39
Other categories	65

(Source: own representation)

In the following we will provide an overview of tools and measures for each category supported by quotations from the participants for the most important ones. To achieve a better overview, not all tools will be highlighted by quotations.

4.2.1 Corporate Culture

Concerning corporate culture as a relevant factor for the participation of employees on internal crowdsourcing platforms, all ten participants replied positively when asked. As one interview partner noted:

Absolutely. Corporate culture or innovation culture is the most important driver of such a platform for me, because ideas do not arise from someone sitting down and racking one's brain, but simply as the idea of a platform is, through a community.

One very important factor related to corporate culture which was mentioned by a couple of interviewees was the idea of independence and freedom in daily routines. Employees need more self-determination in what they do. The majority wants to decide more for themselves on how to achieve a certain goal, according to the motto, set the goal, but let the employees themselves discuss how to achieve it. It was articulated like this by one participant:

Yes, well, of course I should allow the employees to work and think on their own responsibility in some way, so that after all everyone can participate actively. So, if I now live in a way where I say you just do your job and nothing else, then of course this prevents the submission of ideas.

Besides the idea of independence and freedom in decisions, participants lay a focus on making errors as a natural result of trying new things that have not been fully developed but have a potential to turn into something big. Making mistakes should be accepted when you enter unknown realms, as another interviewee pointed out:

Then perhaps what we still lack in terms of innovation culture or where we have potential for improvement is a culture of error and the courage to test something, to experiment, to try something out, where it is not yet clear what I can earn with the product in two or three years, for example.

Another topic which was high on the agenda, was the respectful and open handling of opinions and critique, meaning that everyone can state his or her point without being criticized for it. One interviewee formulated that point as stated in the following:

But I think this climate of well-being is a very big factor, that everybody has the feeling that he can express his opinion and his thoughts freely without thinking

crap, when I say that now [...] then I get blamed by my superiors and will no longer be happy.

The following tools or measures were mentioned by the participants in connection with corporate culture to increase participation:

- Independent work / free decisions
- Error culture: errors may be made
- Freedom of expression without oppression
- Appreciation of employees' opinion: equating employee with customer value
- Appreciation for innovation: equating innovation with sales success
- Culture without inhibition and fear
- Less hierarchy, more say for employees
- Etiquette: informal salutation among colleagues
- Raising awareness for the benefits of innovation
- Obligation to participate in innovation activities
- Strengthening the community spirit through multifunctional teams
- Preserve netiquette on the platform

4.2.2 Incentives and Rewards

In this category we make a distinction between monetary and non-monetary rewards. Monetary bonuses include actual amounts of money as well as vouchers. We investigated different form of rewards as well as situation for which rewards are distributed among the participants. So, one can say we examined when a reward should be given as well as what kind of reward. Some of the interviewees came back to the differentiation between intrinsic and extrinsic motivation. Here is what one participant articulated on that issue:

In order to achieve a sustainable effect, I find it absolutely sensible to rely on intrinsic motivation, because in any case something can change in the mindset of the employee, also in satisfaction and attitude towards the employer. Therefore, I would rather allude to intrinsic motivation, praise, appreciation.

Another participant had the following impression on behavior of the other colleagues:

From my perception, it's more extrinsic, unfortunately. So, we want of course more towards intrinsic motivation, but we notice that again and again when we discuss, there is still a lot going on about awarding.

Having these statements in mind we now take a look at the monetary. Incentives and rewards first followed by the non-monetary.

Monetary

When we speak of monetary bonus, we mean a monetary compensation or a voucher. In some cases, the monetary benefit of ideas can be calculated, but in others not. In many cases, this distinction is used to determine the nature and amount of the bonus. For ideas where the benefit is calculable, idea providers often receive a percentage of that or the bonus is based on certain predefined levels, meaning a step-by-step increase of the bonus when the benefit reaches a new level. One participant described the two situations as follows:

If the savings are calculable, the employee receives a certain percentage of the savings. [...] If we cannot evaluate something in monetary terms, for example if something on the card cover is changed or something like that, then there is a fixed premium.

A very important idea that emerged multiple times among the interviewees was that idea provider needed some kind of appreciation in case that their idea has not been published or implemented after being published on the platform. Some kind of motivation seemed important to almost all interviewees to not lose participants on the platform as the following interviewee portrays:

We have various subcategories of bonuses that exist, for example a pure money bonus or even for ideas that cannot be implemented, a kind of recognition bonus, which should encourage to continue even if an idea cannot be implemented.

Hereinafter an overview of all relevant monetary incentives and rewards extracted from the interviews is presented:

- Monetary compensation system according to monetary benefit: percentage of it or gradual increase
- Recognition bonus for ideas that have not been implemented

- Lump sum or voucher for ideas with indeterminable benefit
- Bonus for everyone, who participated at an idea development through a comment or else
- Voucher from regional partners
- Raffle/lottery of a bonus among all participants and/or not implemented ideas
- Bonus for idea with the most likes or best rating
- The company pays the taxes and social security contributions of the bonus
- Bonus for everybody's first idea published on the platform
- Bonus if a minimum rating or number of likes is achieved
- Bonus for participant with the most ideas submitted and/or published
- Bonus for every idea published on the platform

Non-monetary

Beside the monetary rewards, there exists a variety of non-monetary incentives and rewards. Many proposals circle around the ideas of publishing the idea provider, organizing events and involving C-level managers as a form of appreciation. What many employees regarded as very motivating was the mere publication of ideas or evaluation reports of the deciding committee on the platform. This participant formulated it like this:

However, we also notice that the mere fact that the idea is published is already seen as recognition, especially if it is published for discussion.

A very typical act of rewarding participants in a non-monetary way is the involvement of the board or C-level. The presence of the management at awards ceremonies, the presentation of prizes or, for example, an idea pitch in which the board acts as a jury, are popular variants for involvement. One participant said the following about it:

Therefore the intention or the desire to replace the bonuses by a board event, which the board invites for example the employees, who have submitted an idea, who are assigned to the implementation and with them simply go to lunch, invite to dinner and that one has the possibility to show the company and to network.

What is also highly regarded and relatively easy to implement is a simple praise from colleagues, superiors or platform operators as this interviewee revealed:

Motivating for me, I think praise is just very motivating and also praise from a higher hierarchy level.

Subsequently is a depiction of all relevant non-monetary tools and measures:

- The implementation of an idea per se as a form of confirmation and recognition
- Meeting or dinner with executive board
- Honorable mention of idea providers: on social media, intranet, newsletter, blog, in-house magazine etc.
- A simple praise: from colleagues and superiors
- Participation of the idea provider in the implementation process
- Festivity for all participants of the platform
- Bonus in the form of a vacation day
- Honor of the idea providers at a company party in front of all employees
- Priority idea club for frequent users: create a special community feeling
- Board pitch of the best ideas
- Reputation in the community with regular participation
- The act of handover of bonuses by the executive board
- Personal feedback on rejections and idea evaluation process
- The publication of an idea on the platform per se as a form of confirmation and recognition
- Award participants with a certificate

4.2.3 Leadership Style and Management Support

In this chapter we investigated how leaders or managers need to interact with their employees in order to propel the participation on the crowdsourcing platform. What came up amongst almost all participants was the desire that managers from the C-level down the ladder all participated on the platform to signalize the importance of the issue. One interviewee said this about an active participation of superiors:

And I think it would be helpful if you, as a manager, are also active on the platform, you can also post or comment on ideas, which the employees can then see. 'Oh my boss also thinks about how certain processes function or what the future of our savings bank and our department looks like'.

Furthermore, it is of high value when superiors actively demand the participation and provide some sort of legitimation to participate during working hours. One interviewee put it in these words:

But what is of course an important point is that it is communicated down from the top that it is wanted and that nobody has to worry about it in any way or to be afraid to submit some stupid proposal or something. It must also be supported by the leadership.

One of the participants has displayed the arguments above in a two-sided condition as follows:

Nevertheless, I think it is very important that all managers commit themselves to set an example and to simply promote this and demand it from every employee. I think that is really the character of promoting and demanding. These two aspects are the most effective.

The list below presents previously mentioned, but also additional tools and measures of how leaders and managers can become an important driver of the overall concept:

- Role model function of managers: Living the example of participation on the platform from the very top, from C-level down
- Formulating own ideas and commenting by managers
- Demand ideas: active call for participation of staff
- Legitimation to work on the platform: permission for use during work time
- Employee motivation for participation and mistakes
- Commitment of the Executive Board to the platform: with all consequences
- Regular addressing of the topic by managers: in team meetings, review sessions, appraisal interviews, works meeting, company party etc.
- Prioritization of innovation and the platform in the company by executives
- No contradiction between different management levels
- Announcement of innovation ambassadors in departments and teams
- Cooperative leadership style with personal interaction
- Executive board as jury for best ideas or idea contest
- Flat hierarchy that lower barriers for exchange among colleagues
- Executive board members as patrons or sponsors for the innovation platform

4.2.4 Environment and Resources

This chapter reveals measures and tools associated with the environment as well as resources that should be provided to create a lively participation of employees. These measures range from the resources of time and money to the physical conception of rooms and offices. A very prominent topic in that category, about half of the participants referred to it, is that employees argue they need more time for innovative activities, which they claim they do not have. One participant presents this reason for a lack of time:

Lack of time is actually caused by the lack of personnel. And therefore, you are not willing to invest additional time. You have to reach your goals and you do not reach these goals by doing something else.

A second major topic that came up amongst the participants was that employees should organize events to bring together people with different views and backgrounds to elaborate and discuss on ideas or innovation in general. These events could round tables, workshops or regular community meeting as one interviewee summarized:

Networking events, for example, are useful. You get to know new people and you can also ask a question to someone you do not usually have on your screen, because you know at the moment they're busy or something like that [...] Only once a quarter, so to speak, these exchange events and then there are sometimes workshops to brainstorm for something new to work out.

One measure concerns the actual change of the environment, meaning the creation of spaces for the development of the own creativity. This applies to the design of break rooms as well as working rooms, so that employees can simply get away from these 'rigid eight hours in front of the screen'. This was described in the following way by one participant:

We now have this creative space here, so that I'm really not at my workplace, but rather in such a room where I do not hear about work or the phone ringing all around. Colored rooms so that my thoughts can wander a little, I say.

Yet another proposal of an interviewee dealt with the idea, that the department of the crowdsourcing platform receives a separate budget to implement ideas in real life, without asking other departments for money and permission, as seen in this quote:

What we would like to have in order to make it even better and faster is that we have our own budget as a department for future topics.

The list below summarizes all tools and measures mentioned by interviewees on environment and resources:

- Time and space to work on ideas: during working hours
- Networking rounds on innovation with internals and externals to stimulate exchange
- Rooms for creative work/breaks: open space, equipped with creative work materials
- Enough/more staff: to escape the hustle and bustle of everyday business
- Workshops with managers on innovation and idea generation
- Own budget for the innovation platform (or the superior department) for an independent implementation of ideas
- Imparting of creative thinking and working techniques
- Workshops on the handling of the platform
- Establishment of a creative community
- Organization of a corporate innovation week and idea contests
- Guest appearances in other departments: employees visit other colleagues i.e. back office and sales force
- Publication of clear rules of conduct on the platform
- Publication of the idea generation and evaluation process

4.2.5 Technological Features

The participants received questions about technological features of the platform with the aim of creating a counterpart to the business or organizational perspective. Most of the markings for this category among the interviews were recorded on the subject of availability to the platform off the job or away from the workplace, as many ideas do not arise during daily work. Many interviewees recommended the introduction of an app to guarantee access from anywhere at any time. One interviewee stated it like this:

I definitely think it would be cool if an app enabled access to the innovation platform, which is also available on an employee's private smartphone, because

then I might be able to check out the latest ideas on the train on the way to work or after work.

An obstacle for many users was that they had to register on the platform with a separate login. First, they login to the intranet and then separately for the crowdsourcing platform. This is another hurdle for all rare users and reduces the interaction on the platform. This participant comes straight to the point:

Fast and easy to start naturally via the application, so things like single sign-on, so that you do not have to remember your access rights anymore.

In the following, all relevant technological measures and tools that currently could increase a participation among employees on the platform are listed:

- Platform as an app: independence from workplace and time
- Single sign-on reducing barriers to access platform
- News ticker on ideas: in the intranet or via in-house ‘twitter’ or blog
- Push-notifications: for participants of a certain idea when an activity occurs in relation to it
- Noticeable positioning of the platform: visualization in the intranet on different spots
- Cloud document: central document that can be edited as on cloud platforms such as Google Drive or OneDrive
- Transparency on idea status: after submission and during expert panel evaluation
- Differentiated feedback: evaluation of more aspects/categories of an idea i.e. benefit, costs, implementation effort
- Explanatory duty for poor ratings: poor ratings need to be added by a comment to better understand the issue
- Anonymization for bad ratings
- Possibility to upload several pictures

4.2.6 Other Categories

Apart from the predefined categories, the interviewees proposed tools and measures that could not be matched with these. They are presented in the following:

- Detailed disclosure of the status and rejection of an idea: appreciative remarks as explanation for participants
- Publication of implementation reports: ideas that have been implemented, success stories
- Publication of internal press articles, blog articles or newsletter articles
- Branding of the platform with a name and logo: create something personal, to identify and remember
- Explanatory videos and graphics on the procedures of the platform
- Advice on self-marketing for participants: how idea provider create attention and involvement through i.e. sharing and design of texts etc.
- Continuous communication of the topics ‘innovation’ or ‘crowdsourcing platform’ in team meetings, working rounds, newsfeeds, social media channels, blogs or via email and push-notifications etc.
- Regular open meetups on innovation topics for everybody
- Communication of clear rules of conduct and evaluation criteria
- Invitation to participate on the platform through personal approach of superiors towards their staff
- Consistent communication between different hierarchy levels on the proper handling of the platform
- Roadshows in departments and teams where the platform is presented
- Presentation of the platform as the ultimate solution for handling any problem
- Emphasizing the right of employees to have a say: not everything is decided at the top
- Publication of idea proposals which by definition were not assessed as ideas
- Automatic mail generation when the status of the idea changes: for everybody who participated in the idea

All of these measures and tools derived from the interviews can be subsumed under a new category that seems to be of great importance among participants, which we call *communication*.

Communication

Under the category of ‘communication’ we subsume all acts of promotion of and interaction on the platform, between platform managers and superiors with employees, following the goal of increasing the participation. For most of the participants it was of high importance to have a clear and comprehensible communication on the status and especially on rejected ideas to encourage employees to continue. One interviewee illustrated this with the following example:

If for example you write a complaint anywhere to any email address, never get a response from the company, you have done that three times, then you form your opinion about the company and so there must always be an appreciative reaction and response and justification no matter in which direction. You have to take your time for that.

A relevant tool for many of the interviewees was the public placement of success stories, meaning to reveal ideas that have been implemented in the company after having been discussed and developed on the crowdsourcing platform. It is important to illustrate the influence of employees’ ideas; how every single person can contribute to the bigger picture. This is how one participant expressed this idea:

Then a short notification will be written on our intranet, on what is now planned for implementation, how many bonuses were paid out and that all this comes from S-Innovation platform, simply to keep the employees up-to-date and also to show that there can really arise something from the platform.

A couple of participants realized that it is very important that innovation is always on top of the employees’ minds. The innovation department or the persons in charge of the crowdsourcing platform need to constantly communicate the value of creative potential inside the company to develop products and processes. One participant recognized the following:

If you do not actively promote the subject and closely follow it through in terms of communication, the attention for it will drop, especially in times when perhaps fewer ideas are submitted. This means that you have to back it communicatively, for example by publishing an idea in the news ticker.

Other relevant measures and tools

Finally, we will conclude this section with a couple of measures that do not fit in any of the other categories, but which are still helpful to increase participation on the platform. The idea of creating idea competitions to get out of typical routines towards more job variation as well as a community movement with more ideas on predetermined topics was mentioned most frequently. This creates some kind of event character.

Here are the remaining ideas on how to increase participation on the platform:

- Idea competitions with a specific topic: create character of an event
- Innovation as a target (key performance index) for employees and branches: instead of pure sales numbers
- Use as a project platform to solve problems, receive feedback and evaluate results
- Integration of customer complaints: solve external ideas as well
- Organization of an ‘innovation week’ or event: with internals, externals, experts, customers, lectures and discussions using the platform
- Creation of an innovation branch with creative employees to test ideas

4.3 A Posteriori Results

This paragraph presents a summary of the participants’ opinions on the most important factors influencing the participation of employees after having discussed predetermined factors generated from theory as well as factors that occurred during the interviews. The interviewees were given the opportunity to appoint their three most relevant factors in order to generate a conclusive vote.

The results of their summary can be quantitatively represented as follows (see Table 5): In total, 29 votes were given, seven of which can be assigned to the category of leadership style and management support, whereas the other four predetermined factors, namely corporate culture, incentives and rewards, technology features and finally environment and resources, all received three votes. Although communication was not among the predetermined factors, it received the second most votes. The remaining four votes were assigned to “other important factors.” These four votes covered topics such as positive idea implementation rate, event character with idea competitions, serious examination of the topic of innovation and last but not least a multiperspectivity on innovation.

Table 5: A posteriori Results

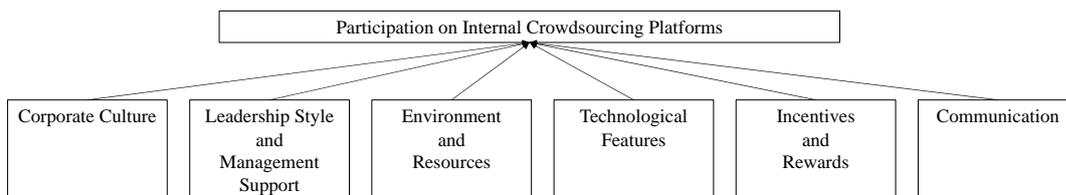
Categories	Number of Votes
Leadership style and management support	7
Communication	6
Incentives and rewards	3
Technological features	3
Environment and resources	3
Corporate Culture	3
Other important factors	4

(Source: own representation)

4.4 Overview of Results

During our interviews, we identified 6 major categories with tools and measures on how to increase participation of employees on internal crowdsourcing platforms. First, we gave the interviewees the opportunity to freely elaborate on any hindering and supporting factors that came to their minds. Then, we asked more detailed questions on the five predetermined categories that we gathered from literature together with fields of interest. we added the technological dimension as a second research stream to the four organizational dimensions: (i) leadership style and management support, (ii) incentives and rewards, (iii) corporate culture and (iv) environment and resources. The interviews revealed that the five predetermined categories needed to be extended by an extra category called ‘communication’. Besides, we found some other tools and measures that do not fit in any of the other categories and did not appear in a frequency allowing us to open up another category. Finally, we gave the participants the chance to summarize the interviews and point out the most important dimensions. Leadership style and management support followed by communication received the most votes. Below we present an overview of the relevant dimensions:

Figure 4: Overview of Influencing Factors



(Source: own representation)

Table 6: Overview of Influencing Tools and Measures

Corporate Culture	Incentives and Rewards	Leadership Style and Management Support
<ul style="list-style-type: none"> - Independent work / free decisions - Error culture: errors may be made - Freedom of expression without oppression - Appreciation of employees' opinion: equating employee with customer value - Appreciation for innovation: equating innovation with sales success - Culture without inhibition and fear - Less hierarchy, more say for employees - Etiquette: informal salutation among colleagues - Raising awareness for the benefits of innovation - Obligation to participate in innovation activities - Strengthening the community spirit through multifunctional teams - Preserve netiquette on the platform 	<ul style="list-style-type: none"> - Monetary compensation system according to monetary benefit: percentage of it or gradual increase - Recognition bonus for ideas that have not been implemented - Lump sum or voucher for ideas with indeterminable benefit - Bonus for everyone who participated at an idea development through a comment or else - Voucher from regional partners - Raffle/lottery of a bonus among all participants and/or not implemented ideas - Bonus for idea with the most likes or best rating - The company pays the taxes and social security contributions of the bonus - Bonus for everybody's first idea published on the platform - Bonus if a minimum rating or number of likes is achieved - Bonus for participant with the most ideas submitted and/or published - Bonus for every idea published on the platform 	<ul style="list-style-type: none"> - Role model function of managers: Living the example of participation on the platform from the very top, from C-level down - Formulating own ideas and commenting by managers - Demand ideas: active call for participation of staff - Legitimation to work on the platform: permission for use during work time - Employee motivation for participation and mistakes - Commitment of the Executive Board to the platform: with all consequences - Regular addressing of the topic by managers: in team meetings, review sessions, appraisal interviews, works meeting, company party etc. - Prioritization of innovation and the platform in the company by executives - No contradiction between different management levels - Announcement of innovation ambassadors in departments and teams - Cooperative leadership style with personal interaction - Executive board as jury for best ideas or idea contest - Flat hierarchy that lower barriers for exchange among colleagues - Executive board members as patrons or sponsors for the innovation platform
Environment and Resources	Technological Features	Communication
<ul style="list-style-type: none"> - Time and space to work on ideas: during working hours - Networking rounds on innovation with internals and externals to stimulate exchange - Rooms for creative work/breaks: open space, equipped with creative work materials - Enough/more staff: to escape the hustle and bustle of everyday business - Workshops with managers on innovation and idea generation - Own budget for the innovation platform (or the superior department) for an independent implementation of ideas - Imparting of creative thinking and working techniques 	<ul style="list-style-type: none"> - Platform as an app: independence from workplace and time - Single sign-on: reducing barriers to access platform - News ticker on ideas: in the intranet or via in-house 'twitter' or blog - Push-notifications: for participants of a certain idea when an activity occurs in relation to it - Noticeable positioning of the platform: visualization in the intranet on different spots - Cloud document: central document that can be edited as on cloud platforms such as Google Drive or OneDrive 	<ul style="list-style-type: none"> - Detailed disclosure of the status and rejection of an idea: appreciative remarks as explanation for participants - Publication of implementation reports: ideas that have been implemented, success stories - Publication of internal press articles, blog articles or newsletter articles - Branding of the platform with a name and logo: create something personal, to identify and remember - Explanatory videos and graphics on the procedures of the platform - Advice on self-marketing for participants: how idea provider create attention and

<ul style="list-style-type: none"> - Workshops on the handling of the platform - Establishment of a creative community - Organization of a corporate innovation week and idea contests - Guest appearances in other departments: employees visit other colleagues i.e. back office and sales force - Publication of clear rules of conduct on the platform - Publication of the idea generation and evaluation process 	<ul style="list-style-type: none"> - Transparency on idea status: after submission and during expert panel evaluation - Differentiated feedback: evaluation of more aspects/categories of an idea i.e. benefit, costs, implementation effort - Explanatory duty for poor ratings: poor ratings need to be added by a comment to better understand the issue - Anonymization for bad ratings - Possibility to upload several pictures 	<ul style="list-style-type: none"> involvement through i.e. sharing and design of texts etc. - Continuous communication of the topics 'innovation' or 'crowdsourcing platform' in team meetings, working rounds, newsfeeds, social media channels, blogs or via email and push-notifications etc. - Regular open meetups on innovation topics for everybody - Communication of clear rules of conduct and evaluation criteria - Invitation to participate on the platform through personal approach of superiors towards their staff - Consistent communication between different hierarchy levels on the proper handling of the platform - Roadshows in departments and teams where the platform is presented - Presentation of the platform as the ultimate solution for handling any problem - Emphasizing the right of employees to have a say: not everything is decided at the top - Publication of idea proposals which by definition were not assessed as ideas - Automatic mail generation when the status of the idea changes: for everybody who participated in the idea
--	---	--

(Source: own representation)

5 Discussion

This study aimed to identify factors influencing the participation of employees on internal crowdsourcing platforms and actual measures or tools that companies can apply in order to increase this participation. Although the integration of internal crowdsourcing platforms as a means of creating innovation in-house is rising among corporates, problems emerged when it came to involving employees on these platforms. The outcomes of this study indicate that corporates and their leaders have the opportunity to achieve an increased participation by adjusting organizational as well as technological factors. For the organizational factors, significant influence can be assigned to corporate culture, incentives and rewards, leadership style and management support, environment and resources and last of all communication. Adding a technological dimension as a second stream to the five organizational dimension completes the framework of dimensions for participative behavior on internal crowdsourcing platforms. This variety of factors reveals the complexity of the topic, but at the same time provides a multitude of opportunities for decision makers to create change and thereby increase the participation of the employees.

Comparing our framework with the framework of Kesting and Ulhøi (2010) which we adduced as a basis for our study, two influencing factors were added to the framework, namely technological features and communication, while another factor proved not to be of higher importance, namely decision structure. The inclusion of technological features occurred out of interest and the growing influence of technological designs, for example the optical display or the availability of functions on the users' behavior (Verbeek, 2006). The decision to include a technological perspective has been confirmed by the remarkably high number of comments and suggestions from participants, not only after asking for the specific topic but also during their free elaboration section at the beginning of each interview. The factor communication appeared with that same wording only in Martins and Terblanche (2003) theory. In their taxonomy, communication was only one determinant of organizational culture that influences creativity and innovation. In our study, we presented communication as a separate factor due to a great number of measures and tools suggested by the interviewees. Subsequently, we will discuss the different factors in more detail and in the same order as presented in the results section.

A priori results

In order to find out how to increase participation on the platform we first asked the interviewees to elaborate on hindering factors. Giving participants the opportunity to comment not only on supporting factors but also on what is currently not going well, opens up a second perspective for the researcher. According to the number of marks in the interviews, 83 for hindering and 68 for supporting arguments, it was easier for the interviewees to articulate their doubts and problems than to propose measures and tools to support participation. Nevertheless, all relevant factors of our framework were covered in the section, in which the interviewees were given the opportunity to freely elaborate on supporting factors.

Corporate Culture

Corporate culture is found to have an influence on the participation of employees as all interviewees replied positively to that question. Nevertheless, it seemed like most of them seemed to have difficulties in grasping that category and formulating specific activities that could help involve more employees. Suggestions on measures and tools remained rather general. A clear distinction of the category from other subject areas seems difficult, as can already be observed in Martins and Terblanche (2003), who set organizational culture as a superior construct above the other factors, such as strategy, organization structure, communication, behavior or rewards and resources. During the interviews it became apparent that many participants also included leadership topics in that section. But we find that factors like leadership style, communication, rewards or resources have such a significant influence that they need to be presented separately from corporate culture. Besides Kesting and Ulhøi (2010) other scholars such as Zuchowski et al. (2016) or Dörner (2012) explicitly mention corporate culture as one dimension of their framework. Our findings confirmed the assumptions of Kesting and Ulhøi (2010) that a low power distance, a failure culture or the general acknowledgement of ordinary employees, whose opinion is respected, play an important role. The most frequently mentioned idea of independent work and more self-responsibility concerning decisions is of fundamental worth (Zuchowski et al., 2016). Hence, corporate culture serves as a cornerstone of a lively platform with an active and controversial participation.

Incentives and rewards

In the course of the study it was revealed that platform managers can wield influence on the participation of employees through monetary as well as non-monetary incentives. Various combinations of what employees receive as an incentive and when they receive an incentive exist to motivate employees to participate. Opinions among participants were divided on the reward system. Some felt it was essential to motivate participants with monetary or non-monetary incentives, while others felt that the best ideas were driven by intrinsic motivation with the goal to improve products and processes of their daily business. One of them even went one step further and argued that monetary incentives have counter-productive effects on participants of the platform, as they might only propose a huge number of irrelevant or insignificant ideas that create more work than value.

Nevertheless, the multitude of measures and tools proposed by interviewees on how to inspire employees to participate on the crowdsourcing platform supports the idea of Vukovic and Natarajan (2013) that the incentive design should be based on different tasks and types of solvers. Six out of eight frameworks that we investigated, evaluated incentives as a fundamental mechanism to affect the behavior of employees. Thus, an influence of a monetary and non-monetary incentive on the participative behavior seems to be out of the question, but platform managers need to be sensitive to the types of recognition and reward that will cause more creativity and innovation among personnel, as every organization, every team and every individual is distinct (Tushman and O'Reilly, 1997)

Leadership style and management support

The study further finds that superiors, especially C-level managers, can have a very significant influence on the participation behavior of employees through a certain kind of leadership style and management support activities. The factor leadership style and management support received the most votes, seven out of 29 votes, among the interviewees. The number of votes supports the variety of measures and tools proposed by the interviewees to create more involvement on the platform. Our results support the proposition of Kesting and Ulhøi (2010) that higher levels of management support are

positively related to higher levels of employee participation in innovation activities. The necessity of a supportive leadership style to guarantee participation is in line with De Jong & Hartog (2007) who found that leaders influence employees' innovative behavior. Among other things, leaders can have an impact on the idea generation and application of employees through innovative role-modelling, intellectual stimulation, providing vision or organizing feedback on ideas. It follows that, without the support and involvement of higher management levels or even c-levels, a functioning platform characterized by intensive interaction will be difficult to implement.

Environment and Resources

The dimension of environment and resources is confirmed by our study as a relevant factor to influence the participation on internal crowdsourcing platforms. Multiple measures and tools were presented by the participants on how to increase participation among the employees. A broad interpretation of the category gives the participants an ample scope for their ideas on how to implement measures that contribute to a higher participation. Among others, it became clear that the dimensions of time, the design of spaces, clear guidelines and opportunities for exchange in form of workshops and trainings are relevant tools for platform managers to involve more employees.

Especially the most frequently mentioned dimension of time (Kesting and Ulhøi, 2010) created many disagreements between the participants. While one half considered the lack of time to be the main source of lacking participation, the other half saw it as a simple excuse not to participate. According to the second group, many employees waste much of their official working time on less important and non-work-related topics, which they could use for innovation activities instead. In their opinion, it is not the time scarcity but the missing willingness of employees that causes lower levels of participation.

Additionally, membership management, in the sense of bringing together the right people at the right place, needs to be installed for the governance of open source software development systems (Jain, 2010; Zogaj and Bretschneider, 2014). Meetings can add knowledge to the interaction of people by increasing constant communication and encouraging discourse (Jarzabkowski and Seidl, 2008). Similarly, our study finds that workshops, guest appearances and communities are tools that gather employees to increase knowledge exchange. In order to guarantee a smooth operation of the platform, certain regulations are at need (Zuchowski et al., 2016). The results of our study confirm

that an implementation of rules of conduct and the publication of all procedures facilitate the handling of the platform and reduce misconceptions. As a result, the necessity for the integration of *environmental factors* as well as relevant *resources* is in line with other scholars, who, however, only covered parts of our results in their respective findings.

Technological Features

This study finds that technological features have a significant influence on the participation of employees, on the provision of new ideas as well as the involvement with ideas of others in the form of commenting and evaluating them. The availability or the non-availability of technological features and the overall technological design of a platform has significant influence on the behavior of users today (Verbeek, 2006). The sheer amount of technological options, in the form of features and tools, is ever-growing. Companies have to keep up with them in order to fulfill the needs and wishes of their customers but also their employees. Missing new trends and neglecting technological claims of employees can end the interaction with a technology quickly, for example the breakdown of Kodak in the digital photography (Lucas Jr. and Goh, 2009) or Nokia in the development of smartphones (Vuori and Huy, 2016). Benbya and Leidner (2016) investigated the functionality and technology features of internal crowdsourcing platforms as well. Their “analysis reveals the necessity to adopt a configurational perspective among design elements to reinforce value creation” (p.1), which confirms our findings. Technological features can be seen as a contrast to organizational determinants but are not of minor importance to guarantee a functioning and entertaining platform, that employees like to use.

Communication

Lastly, this study finds that communication, which refers to promotion and interaction of the platform, the platform managers and superiors with the employees, contributes to the participation on internal crowdsourcing platforms. The number of marks in the interviews and the number of tools and measures suggested by the participants reveals the importance of that factor, especially as it was not one of the predetermined factors but evolved over the course of the interviews. Further, the influence is underlined by the ‘a posteriori’ judgment of the interviewees, where communicational topics received 6 out of 29 votes for the most influential factors and thus the second most votes. In line with Barret (1997) and based on Robbins’ (1996) observation that a transparent and open

communication building on trust will positively influence creativity and innovation, this study finds that disclosure of an idea status or the publication of reports, rules, videos and articles supports the participative behavior of employees. Martins and Terblanche (2003) argue that an open-door communication policy between individual, teams and departments influences a creative and innovative behavior, which supports our findings, as participants suggested open meetups, roadshows in departments and teams and continuous communication on innovation and the platform in team meetings, working rounds and social media channels. Therefore, in contrast to most of the existing literature, except for Martins and Terblanche (2003), the social mechanism of communication is inevitable for a successful integration of internal crowdsourcing platforms in a corporate environment. Without continuously playing the topic and reminding people to interact, the success of such a platform is questionable, especially when it is new to the company and employees' awareness has to be raised.

Summary

Hence, participation on internal crowdsourcing platform is a multilayered construct which relies on different sets of activities. Through multiple interviews and iterations of coding, these measures and tools were grouped into six main categories: *corporate culture, incentives and rewards, leadership style and management support, environment and resources, technological features and communication*. Each of these categories can be transferred into the daily business of an organization through a set of interconnected activities, that are not mutually exclusive and influence each other (Reckwitz, 2002; Martins and Terblanche, 2003). For example, a certain leadership style is linked to a corporate culture concerning a behavior that encourages innovation or the employees' autonomy and empowerment (Martins and Terblanche, 2003). Although it is often not easy to clearly separate the different categories, the results have proven that all of them play a significant role. Therefore, this study argues that participation on internal crowdsourcing platforms is most effectively achieved when multiple activities from various categories are realized simultaneously.

6 Conclusion

This research aimed to identify factors enhancing the participation of employees on internal crowdsourcing platforms. Therefore, we investigated both organizational and technological dimensions and their underlying tools and measures that are relevant for practitioners. Based on a qualitative analysis of supporting and hindering activities for the participative behavior of employees, which was strengthened through quantitative elements, it can be concluded that six factors, namely *corporate culture, incentives and rewards, leadership style and management support, environment and resources, technological features* and *communication*, are of significant importance. For each of the six factors we found a variety of measures and tools that can be applied to build up an internal crowdsourcing platform with employees who contribute a multitude of ideas and actively interact and comment on the ideas of others. These measures and tools represent a practical toolbox for all platform managers willing to improve participation. The results indicate that on the one hand internal crowdsourcing platforms are a complex construct but on the other hand platform managers have a wide range of activities at their disposal to influence the participation of employees.

Our study began with a literature review which serves as a foundation of the reader's understanding on how innovation has developed towards internal crowdsourcing over the past decades. Further, we examined a series of papers for relevant dimension that influence the participation in innovation activities in order to set a basis for the development of our questionnaires. Four of the six factors that we considered as relevant were predetermined through literature, namely *corporate culture, incentives and rewards, leadership style and management support, environment and resources*. We added the factor of *technological features* in order to have a counterdraft to solely organizational factors. During the course of our ten semi-structured interviews it became apparent that besides the five predetermined factors also *communication* also played a major role. The interviewees delivered a great number of measures and tools to improve participation of employees on internal crowdsourcing platforms for each of the six categories. Thus, we regard all of the factors as confirmed.

Based on the findings of our study, a number of theoretical and practical implications can be withdrawn but also several limitations need to be considered which serve as a starting point for future research fields.

6.1 Implications

This study identified measures and tools that can be applied in organizations with the aim of increasing participation on their internal crowdsourcing platforms, where employees function as a knowledge base that generates and develops new ideas for products and processes. Through the development of the new framework which comprises the six relevant factors influencing participation, several theoretical and practical implications can be deduced.

6.1.1 Theoretical Implications

Firstly, by investigating which specific activities influence the participation of employees on crowdsourcing platforms, this study adds to the research on internal crowdsourcing research. The identification of the six dimensions *corporate culture, incentives and rewards, leadership style and management support, environment and resources, technological features* and *communication* grants unique insights into how platform managers involve individuals in the idea generation and development. Managers responsible for the performance of the platform increase employee participation through the engagement in activities from the previously mentioned six categories. Overall these findings partially confirm determinants that have been found by other scholars in the field of governance mechanisms in crowdsourcing and the participation in innovation (Kesting and Ulhøi, 2010; Martins and Terblanche, 2003; Zogaj and Bretschneider, 2014). Nevertheless, our study provides the first framework for participation on internal crowdsourcing platforms with detailed measures and tools.

Secondly, through the execution of our qualitative research, we found that not only organizational perspective is relevant for the involvement of employees on the platform, but also technological perspective. This study reveals that the implementation of the right features or a simple but appealing design of the platform are relevant to reduce any existing hurdles that appear in the handling of the platform and thereby guaranteeing a fluent application. Any technological hurdle reduces the willingness to participate and the joy in developing new ideas. Previous work in the field of participation on internal crowdsourcing platforms either neglected the technological component (see Table 1) or provided a simple overview of all potential technological features without their influence on the participative behavior of employees on crowdsourcing platforms (Benbya and Leidner, 2016), except for Leimeister et al. (2009) who provide a list of technological

tools, but do not classify technological features as a determinant of their framework which reveals activation-supporting components for IT-based idea-competition of lead users. This study thus extends the small amount of literature concerning technological features for internal crowdsourcing platforms.

Thirdly, the study adds to the existing body of research in the sense that results have been gathered through use of an empirical approach in the form of qualitative research. Semi-structured interviews were conducted in order to understand practical problems and potential measures and tools to dissolve the lack of participation among employees from firsthand. Kesting and Ulhøi's (2010) framework, which served as a basis for our investigations, was solely a literature study which was descriptive in nature. The findings of our empirical study confirm four of their five drivers of employee driven innovation except the decision structure. Besides Kesting and Ulhøi's (2010) also other studies in the research area of governance mechanisms for crowdsourcing derived their model through theoretical approaches (Martins and Terblanche, 2003; Leimeister et al., 2009; Zuchowski et al., 2016). Other studies build their frameworks based on examinations of secondary data (Jain, 2010; Zogaj and Bretschneider, 2014; Blohm et al., 2018). The results of this study fill this evident methodological gap.

Fourthly, over the course of this study the importance of a so far untapped dimension in that research field emerged, namely *communication*. The findings revealed that communication is a relevant factor for employees' participation. Through a transparent, continuous and consistent communication on and about the platform, organizations achieve higher levels of participation. So far, research on similar fields of study neglected the influence of communication except for Martins and Terblanche (2003), who found an influence of open communication on people's creativity. However, our findings claim that it has not only significant influence on creativity but also on actual participation. The theoretical implication is that to ignore communication as a driver for the participation of employees on internal crowdsourcing platforms could give a misleading picture of the overall theoretical construct.

6.1.2 Practical Implications

The findings of this research have considerable managerial implications. Organizations have pressure to keep up with or even better to be ahead of their competition. One option to achieve that goal is to be more innovative and develop superior products or services.

Over the past few years a growing number of organizations have adopted internal crowdsourcing platforms as an additional strategy to solve problems and generate innovations. Therefore, it is crucial for platform managers of the Sparkasse but also for other managers of internal crowdsourcing platforms in general, to know what factors influence an active participation and which measures and tools they can apply to improve a certain state.

Understanding that *corporate culture, incentives and rewards, leadership style and management support, environment and resources, technological features* and *communication* influence the participation of employees on crowdsourcing platforms, enables managers to act more accurately when choosing relevant measures and tools. Our research delivers a variety of activities that practitioners can apply to influence the participative behavior of employees. For example, our research suggests that managers should establish a surrounding where employees work more independently, where errors can be made without the fear of oppression and opinions are appreciated. Based on our findings, managers should appreciate the effort of employees participating in innovation activities with monetary but also non-monetary incentives, independent of the result. Further, especially higher-level managers can evoke employee participation and thereby unveil hidden knowledge inside the organization by being a role model. Environmental circumstances and resources are of great importance, meaning that time, space and knowledge should be provided by managers so that employees even have the chance to contribute ideas and critically discuss with peers. Moreover, platform managers should enter a state of continuous communication with the users of the platform, in the sense that they promote the platform and inform users about decisions, rules and results of ideas. Last but not least, our findings suggest managers to have a critical view on technological features that hinder or support participation on the platform.

Accordingly, our study provides a blueprint for a new way to involve employees in internal crowdsourcing activities on platforms. The findings add to a growing corpus of research showing that platform managers have multiple opportunities to get employees active in innovation activities, providing own ideas and working on the ideas of others. Through a diverse set of measures and tools, participation will be increased on internal crowdsourcing platforms. An increased participation on internal crowdsourcing platforms raises the chance of success for the innovation output through more ideas that have been introduced and more critical discussions among participants. The usage of internal

knowledge saves not only external consultancy costs but unveils hidden knowledge inside the organization that is often more distinct than external knowledge. Therefore, a functioning internal crowdsourcing platform with high level of participation is key to the innovation success.

6.2 Recommendations

Based on our findings, we want to provide a few recommendations for practitioners on how to proceed in order to generate more employee participation. In section 4.3 we asked the interviewees to name the three most important factors relevant for the participation of employees in their opinion. The results can function as a basic foundation for the first steps that platform managers and the overall organization using an internal crowdsourcing platform can undertake.

As the dimension *leadership style and management support* received the most votes among interviewees (see Table 5), we recommend practitioners to involve high level managers in the process of internal crowdsourcing as the priority number one. Without the support of leading managers that act as positive role models, who provide own ideas and demand ideas from employees, the platform will not tap its full potential.

After having optimized the dimension of leadership style and management support, practitioners should focus on the dimension of *communication* as the second priority. Although this dimension just emerged in the course of the interviewees, it became clear that it is one of the major drivers for an active participation of employees. Platform managers need to guarantee a transparent communication about processes on the platform and statuses of certain projects, but they also need to keep up a constant communication about the crowdsourcing platform and innovation in general in the whole organization.

In a next step, practitioners should evaluate the situation in the remaining dimensions. In order to achieve that, they could build a simple poll asking users but also non-users, which of the remaining dimensions restrains them the most from participating on the platform. Practitioners then have the identified tools and measures from this thesis to counteract each of the remaining dimensions according the results of their short poll. The dimension with the most votes should then be tackled first.

6.3 Limitations and Future Research

Our work clearly has some limitations. Despite this, we believe our work could be a starting point for more research on internal crowdsourcing platforms and how to increase participation. One limitation regarding the research design is that a qualitative case study is often connected to a lack of predefined methodology or a potential subjectivity of the researcher (Gerring, 2007; Yin, 2009). In our study, we tried to minimize the existing concerns as follows. The interviewees received openly formulated questions at the beginning of the interview to freely elaborate and thereby reduce researcher's bias. Further, interviewees were given the opportunity to evaluate the most relevant factors influencing participation of employees at the end of the interviews. The lack of predefined methodology was reduced by a literature review comparing papers and their finding in similar research fields. Our results are encouraging and should be validated by a quantitative approach in the future.

Furthermore, the study only addressed participants of a single organizational group for the investigation of participation on internal crowdsourcing platforms. This point reveals another critique that is often brought to the surface when discussing the case study approach, namely the limited potential for generalization for other industries and for other cultures (Yin, 2009). In this research, validity was increased through an embedded single-case study with multiple units of analysis. Nevertheless, future research should investigate participative behaviors of employees in settings of different countries and industries over a longer period of time to increase the generalizability of the findings.

Moreover, the identification of a framework for influencing factors of participation on internal crowdsourcing platforms lays the foundations for further research on each of these factors. We argue that platform managers concentrate the most detailed knowledge on the proceedings of the crowdsourcing platforms on themselves. Nevertheless, experts from each of these different fields could further extent the knowledge and provide more measures and tools for practitioners to apply. In this study, we concentrated on participants who engage in activities on the platform to first establish an overall framework. For example, future research could investigate the cornerstones of an error culture, the proportion of monetary and non-monetary incentives, the right amount of leadership involvement, the actual time that should be granted to employees to work on innovation and depending on which factors, comparison with actually available

technological features or the right amount of communication that does not overexert employees.

Moreover, this study has solely focused on the factors influencing participation per se and the measures and tools with which practitioners can reduce hurdles and motivate employees to actively participate on the platforms. An investigation on whether these factors influence each other and how they are interconnected was not performed in this research. Hence, to better understand the implications of these results, future studies could address the interconnectedness between the six factors influencing participation, *corporate culture, incentives and rewards, leadership style and management support, environment and resources, technological features and communication*. Additionally, one could investigate the actual influence of each specific tool and measure. The conduct of the proposed fields of future research would further enrich the findings of this study.

References

- Ågerfalk, P.J. & Fitzgerald, B. (2008). Outsourcing to an Unknown Workforce: Exploring opensourcing as a global sourcing strategy. *MIS Quarterly*, 32(2), 385-409.
- Ahmed, P. K. (1998). Culture and climate for innovation. *European Journal of Innovation Management*. 1 (1), 30-43.
- Andrew, J. P./Manget, J./Michael, D. C./Taylor, A./Zablit, H. (2010). *Innovation 2010: A return to prominence—and the emergence of a new world order*. Boston, MA: Boston Consulting Group.
- Arazy, O./Gellatly, I./Brainin, E./Nov, O. (2015). Motivation to Share Knowledge Using Wiki Technology and the Moderating Effect of Role Perceptions. *Journal of the Association for Information Science and Technology*, 67, 2362-78.
- Bailey, B. P. & Horvitz, E. (2010). What's Your Idea? A Case Study of a Grassroots Innovation Pipeline within a Large Software Company. *Proceedings of the ACM SIG CHI Conference on Human Factors in Computing Systems*.
- Baregheh, A./Rowley, J./Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management decision*, 47 (8), 1323-1339.
- Barret, R. (1997). Liberating the corporate soul. *HR focus*, 74 (4), 15-16.
- Benbya, H./Leidner, D. (2016). Harnessing Employee Innovation in Idea Management Platforms: Lessons from Allianz UK. *MISQ Executive*.
- Benner, M. J./Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *The Academy of Management Review*, 28 (2), 238-256.
- Berelson, B. (1952). *Content analysis in communication research*. New York, NY, US: Free Press.
- Birt, L./Scott, S./Cavers, D./Campbell, C./Walter, F. (2016). Member checking: a tool to enhance trustworthiness or merely a nod to validation? *Qualitative health research*, 26 (13), 1802-1811.

Blohm, I./Zogaj, S./Bretschneider, U./Leimeister, J. M. (2018). How to manage crowdsourcing platforms effectively? *California Management Review*, 60 (2), 122-149.

Boudreau, K. J./ Lakhani, K. R. (2013). Using the crowd as an innovation partner. *Harvard business review*, 91 (4), 60-69.

Brabham, D. C. (2008). Crowdsourcing as a Model for Problem Solving an Introduction and Cases. *Convergence: the international journal of research into new media technologies*, 14 (1), 75-90.

Brabham, D. C. (2012). A Model for Leveraging Online Communities. *The Participatory Cultures Handbook*. 120-129.

Brockhoff, K. (1999). *Forschung und Entwicklung: Planung und Kontrolle*. Munich: De Gruyter.

Chanal, A. V./Caron-Fasan, M. (2010). The difficulties involved in developing business models open to innovation communities: the case of a crowdsourcing platform. *M@n@gement-AIMS*, 13 (4), 318-340.

Chesbrough, H.W. (2003) *The Era of Open Innovation*, *MIT Sloan Management Review*, 44, 3, 35.

Chesbrough, H. W. (2006). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press.

Chesbrough, H./Vanhaverbeke, W./West, J. (Eds.). (2006). *Open innovation: Researching a new paradigm*. Oxford University Press on Demand.

Cohen, M.D./March, J.G./Olsen, J.P. (1972). A garbage can model of organizational choice. *Administrative Science Quarterly*, 17 (1), 1-25.

Creswell, J. W. (1994). *Research design: Qualitative & quantitative approaches*. Sage publications.

Damanpour, F. (1991). Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators. *The Academy of Management Journal*, 34 (3), 555-590.

Danneels, E. (2002). The Dynamics of Product Innovation and Firm Competences. *Strategic Management Journal*, 23 (12), 1095-1121.

Deakins, D./Freel, M. (2009). Innovation and Entrepreneurship. In: Deakins, D. and Freel, M. (eds.) (2009). Entrepreneurship and Small Firms. London: McGraw-Hill Education 5th.

Deutscher Sparkassen und Giroverband e. V. (2017). Finanzbericht 2017 der Sparkassen-Finanzgruppe.

Dewar, R. D./Dutton J. E. (1986). The Adoption of Radical and Incremental Innovations: An Empirical Analysis. *Management Science*, 32 (11), 1422-1433.

Dey I. (1993) *Qualitative Data Analysis. A User-Friendly Guide for Social Scientists*. Routledge, London.

Dörner, N. (2012). Innovative work behavior: The roles of employee expectations and effects on job performance, Doctoral Dissertation, St. Gallen.

Drucker, P. F. (1985). *Innovation and Entrepreneurship Practice and Principles*. Harper & Row, New York.

Dul, J. & Hak, T. (2007). *Case Study Methodology in Business Research*. London: Routledge.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14 (4), 532-550.

Elo, S./Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing*, 62 (1), 107-115.

Enkel, E./Gassmann, O./Chesbrough, H. (2009). Open R&D and open innovation: exploring the phenomenon. *R&D Management*, 39 (4), 311-316.

Erlandson, D. A./Harris, E. L./Skipper, B. L./Allen, S. D. (1993). *Doing Naturalistic Inquiry: A Guide to Methods*. Newbury Park, CA: Sage Publications.

Estellés-Arolas, E./González-Ladrón-De-Guevara, F. (2012). Towards an integrated crowdsourcing definition. *Journal of Information science*, 38 (2), 189-200.

Ettlie, J. E./Bridges, W. P./O'Keefe, R. D. (1984). Organization Strategy and Structural Differences for Radical Versus Incremental Innovation. *Management Science*, 30 (6), 682-695.

Ford, R.C. (2001). Cross-functional structures: a review and integration of matrix organization and project management. *Journal of Management*, 18 (2), 267-94.

Frenz, M./ R. Lambert (2012). "Mixed modes of innovation: An empiric approach to capturing firms' innovation behaviour", OECD Science, Technology and Industry Working Papers, No. 2012/06, OECD Publishing, Paris.

Gabele, E. (1978). Das Management von Neuerungen: Eine empirische Studie zum Verhalten, zur Struktur, zur Bedeutung und zur Veränderung von Managementgruppen bei tiefgreifenden Neuerungsprozessen in Unternehmen. *Zeitschrift für betriebswirtschaftliche Forschung*, 30, 194-226.

Gassmann, O. (2006). Opening up the innovation process: towards an agenda. *R&D Management*, 36 (3), 223-228.

Gassmann, O. (2012). *Crowdsourcing-Innovationsmanagement mit Schwarmintelligenz: Interaktiv Ideen finden-Kollektives Wissen effektiv nutzen-Mit Fallbeispielen und Checklisten*. Carl Hanser Verlag GmbH Co KG.

Gassmann, O./Enkel, E. (2004). Towards a theory of open innovation: three core process archetypes.

Geiger, D./Rosemann, M./Fielt, E./Schader, M. (2012). Crowdsourcing information systems-definition typology, and design. *Thirty Third International Conference on Information Systems*.

Gerring, J. (2016). Is There a (Viable) Crucial-Case Method? *Comparative Political Studies*, 40 (3), 231-253.

Gisser, P. (1965). Taking the "Chances" out of the Product Introduction, in: *Information Management*, 50, 327-341.

Gregg, D. G. (2010). Designing for collective intelligence. *Communications of the ACM*, 53 (4), 134-138.

Gupta, A. K./ Tesluk, P. E./ Taylor, M. S. (2007). Innovation At and Across Multiple Levels of Analysis. *Organization Science*, 18 (6), 885-897.

Hage, J. (1980). *Theories of Organization*. New York: Wiley Interscience.

Hammon, D.-K. L./Hippner, H. (2012). Crowdsourcing. *Business & Information Systems Engineering*, 4 (3), 163-166.

Hetmank, L. (2014). A synopsis of enterprise crowdsourcing literature. *Twenty Second European Conference on Information Systems*, Tel Aviv.

Hirth, M./Hoßfeld, T./Tran-Gia, P. (2013). Analyzing costs and accuracy of validation mechanisms for crowdsourcing platforms. *Mathematical and Computer Modelling*, 57 (11-12), 2918-2932.

Howe, J (2006). The rise of crowdsourcing. *Wired Magazine*, 14 (6), 1-4.

Howe, J. (2008). *Crowdsourcing, why the power of the crowd is driving the future of business*, New York, NY: Crown Business.

Hsieh, H. F./Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative health research*, 15 (9), 1277-1288.

Jain, R. (2010). Investigation of Governance Mechanisms for Crowdsourcing Initiatives. *Proceedings of the Sixteenth Americas Conference on Information Systems (AMCIS)*, Lima, Peru.

Jarzabkowski, P./Seidl, D. (2008). The Role of Meetings in the Social Practice of Strategy. *Organization Studies*, 29 (11), 1391-1426.

Keeley, L. (2013). *Ten types of innovation: the discipline of building breakthroughs*. Hoboken, NJ: Wiley.

Kesting, P./ Ulhøi, J. P. (2010). Employee-driven innovation: extending the license to foster innovation. *Management decision*, 48 (1), 65-84.

Kohlbacher, F. (2006). The use of qualitative content analysis in case study research. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 7 (1), 1-30.

Krippendorff, K. (1980). *Content analysis: An introduction to its methodology*. Sage publications.

Kuczmariski, T. D. (1996). What is innovation? The art of welcoming risk. *Journal of Consumer Marketing*, 13 (5), 7-11.

Küpper, D./Lorenz, M./Maurer, A./Wagner, K. (2013). Managing the "Unmanageable": Radical Innovation. Boston Consulting Group Perspectives.

Leimeister, J. M. (2010). Collective Intelligence. *Business & Information Systems Engineering*, 2 (4), 245-248.

Leonardi, P. M. (2015). Ambient Awareness and Knowledge Acquisition: Using Social Media to Learn 'Who Knows What' and 'Who Knows Whom'. *MIS Quarterly*, 39, 747-62.

Lüttgens, D./Pollok, P./Antons, D./Piller, F. (2014). Wisdom of the crowd and capabilities of a few: internal success factors of crowdsourcing for innovation. *Journal of Business Economics*, 84 (3), 339-374.

Lucas Jr, H. C., & Goh, J. M. (2009). Disruptive technology: How Kodak missed the digital photography revolution. *The Journal of Strategic Information Systems*, 18 (1), 46-55.

Lundvall, B. Å. (Ed.). (2010). National systems of innovation: Toward a theory of innovation and interactive learning (Vol. 2). Anthem press.

Lykourantzou, I./Vergados, D. J./Papadaki, K./Naudet, Y. (2013). Guided crowdsourcing for collective work coordination in corporate environments. *International Conference on Computational Collective Intelligence (90-99)*. Springer, Berlin, Heidelberg.

Manning, S. (1999). The future of globalization [Special issue]. *Journal of World-Systems Research*, 5, 136-314.

Martins, E. C./Terblanche, F. (2003). Building organisational culture that stimulates creativity and innovation. *European journal of innovation management*, 6 (1), 64-74.

Mayring, P. (1994). Qualitative Inhaltsanalyse. *Texte verstehen: Konzepte, Methoden, Werkzeuge*, 14, 159-175.

Mayring, P. (2000). Qualitative Content Analysis. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 1 (2), Art. 20.

Mayring, P. (2010). *Qualitative Inhaltsanalyse. Grundlagen und Techniken*. Beltz.

Miosch, S. (2015). *Qualitative Interviews*. Berlin: De Gruyter.

Muller, M./Geyer, W./Soule, T./Daniels, S./Cheng, L.-T. (2013). Crowdfunding Inside the Enterprise: Employee initiatives for innovation and collaboration, in Proceedings of the ACM SIG CHI Conference on Human Factors in Computing Systems (Paris, France).

Myers, S./Marquis, D. G. (1969). Successful industrial innovations. A study of factors underlying innovation in selected firms. National Science Foundation, NSF69-17, Washington.

O'Brien, K./Arundel, A./Bowen Butchart, D./Gatenby-Clark S. (2015). "New evidence on the frequency, impacts and costs of activities to develop innovations in Australian businesses: Results from a 2015 pilot study", report to the Commonwealth, Department of Industry, Innovation and Science, Australian Innovation Research Centre, Hobart.

OECD/Eurostat (2005). Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition, The Measurement of Scientific and Technological Activities, OECD Publishing, Paris.

OECD/Eurostat (2018). Oslo Manual 2018: Guidelines for Collecting, Reporting and Using Data on Innovation, 4th Edition, The Measurement of Scientific, Technological and Innovation Activities, OECD Publishing, Paris/Eurostat, Luxembourg.

Poetz, M. K./Schreier, M. (2012). The value of crowdsourcing: can users really compete with professionals in generating new product ideas? *Journal of Product Innovation Management*, 29 (2), 245-256.

Poland, B. D. (1995). Transcription quality as an aspect of rigor in qualitative research. *Qualitative inquiry*, 1 (3), 290-310.

Potter, W. J./Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. *Journal of Applied Communication Research*, 27, 258-284.

Powell, W. W./Koput, K./Smith-Doerr, L. (1996). Interorganizational collaborations and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly*, 41, 116-145.

Reckwitz, A. (2002). Toward a Theory of Social Practices. *European Journal of Social Theory*, 5 (2), 243-263.

- Redding, W. C. (1972). *Communication within the organization: An interpretive view of theory and research*. New York: Industrial Communication Council.
- Reichert, L. (1994). *Evolution und Innovation*. Duncker & Humblot.
- Robbins, S. P. (1997). *Organizational behavior: concepts, controversies, applications*. Prentice Hall.
- Rohrbeck, R./Thom, N./Arnold, H. (2015). IT Tools for Foresight: The integrated insight and response system of Deutsche Telekom Innovation Laboratories. *Technological Forecasting and Social Change* 97 (1): 115-126.
- Rouse, A. C. (2010). A preliminary taxonomy of crowdsourcing. In 21st Australasian Conference on Information Systems. Brisbane.
- Saunders, M./Lewis, P./Thornhill, A., (2009). *Research methods for business students*. Prentice Hall: London.
- Schenk, E./Guittard, C. (2011). Towards a characterization of crowdsourcing practices. *Journal of Innovation Economics Management*, (1), 93-107.
- Schlagwein, D./Bjørn-Andersen, N. (2014). Organizational Learning with Crowdsourcing: The revelatory case of LEGO. *Journal of the Association of Information Systems*, 15(11), 754-778.
- Schumpeter, J. A. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business*. New Brunswick, NJ and London: Transaction Publishers.
- Schumpeter, J. A. (1939). *Business Cycles*, McGraw-Hill, New York.
- Schumpeter, J. A. (1942). *Capitalism, Socialism and Democracy*. London: Allen and Unwin.
- Sheth, J. N./Stellner, W. H. (1979). Psychology of innovation resistance: The less developed concept (LDC) in diffusion research. Faculty Working Papers No. 622. Urbana-Champaign, IL: College of Commerce and Business Administration, University of Illinois at Urbana-Champaign.

Simula, H./Vuori, M. (2012). Benefits and barriers of crowdsourcing in B2B firms: Generating ideas with internal and external crowds. *International Journal of Innovation Management*, 16 (6).

Skopik, F./Schall, D./Dustdar, S. (2012). Discovering and managing social compositions in collaborative enterprise crowdsourcing systems. *International Journal of Cooperative Information Systems*, 21 (04), 297-341.

Smith, D. (2006). *Exploring innovation*. Maidenhead, Berkshire: McGraw-Hill Education.

Spiegeler, D. E./Muhdi, L./Stöcklin, D./Michahelles, F. (2011). Crowdsourcing for “Kiosk of the Future” – a retail store case study. *Proceedings of the 17th Americas Conference on Information Systems (AMCIS)*, Paper 324. Detroit, USA.

Stemler, S. (2001). An overview of content analysis. *Practical assessment, research & evaluation*, 7 (17), 137-146.

Stohl, C./Cheney, G. (1996). Participatory processes / paradoxical practices. Paper presented to the Department of Communication at the University of Colorado, Boulder, October.

Stohl, C./Cheney, G. (2001). Participatory processes/paradoxical practices: Communication and the dilemmas of organizational democracy. *Management Communication Quarterly*, 14(3), 349-407.

Subramaniam, M./Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48 (3), 450-463.

Surowiecki, J. (2005). *The wisdom of crowds: Why the many are smarter than the few and how collective wisdom shapes business, economies, societies and nations*. Doubleday.

Thom, N. (1980). *Grundlagen des betrieblichen Innovationsmanagements*. Peter Hanstein Verlag.

Tidd, J./Bessant, J./Pavitt, K. (2005). *Managing innovation: integrating technological, market and organizational change*. John Wiley and Sons Ltd.

Tushman, M. L./ O'Reilly, C. A. (1997). *Winning through innovation: A practical guide to leading organizational change and renewal*. Boston, MA, Harvard Business School Publishing.

Ulrich, K. T./S. D. Eppinger. (2008). *Product design and development* (4th ed.). New York: McGraw-Hill.

Uhlmann, L. (1978). *Der Innovationsprozess in westeuropäischen Industrieländern*. Duncker & Humblot.

Vahs, D./ Brem, A. (2013). *Innovationsmanagement*. Stuttgart: Schäffer-Poeschel Verlag.

Verbeek, P. P. (2006). Materializing morality: Design ethics and technological mediation. *Science, Technology, & Human Values*, 31(3), 361-380.

Villarroel, J. A./Reis, F. (2010). Intra-Corporate Crowdsourcing (ICC): Leveraging upon rank and site marginality for innovation. *CrowdConf 2010*.

Vukovic, M./Bartolini, C. (2010). Towards a research agenda for enterprise crowdsourcing. Leveraging applications of formal methods, verification, and validation. Berlin Heidelberg: Springer, 425-434.

Vukovic, M. and Natarajan, A. (2013). Enhancing Quality of IT Services Delivery Using Enterprise Crowdsourcing, *International Journal of Cooperative Information Systems* 22(3): 1-21.

Vuori, T. O./Huy, Q. N. (2016). Distributed attention and shared emotions in the innovation process: How Nokia lost the smartphone battle. *Administrative Science Quarterly*, 61 (1), 9-51.

Weber, R. P. (1990). *Basic content analysis*. Beverly Hills, CA: Sage.

Yin, R. K. (2003). *Case Study Research: design and methods*. (3. Ed.). Sage Publications.

Zhao, Y./Zhu, Q. (2014). Evaluation on crowdsourcing research: Current status and future direction. *Information Systems Frontiers*, 16 (3), 417-434.

Zhu, H./Sick, N./Leker, J. (2016). How to use crowdsourcing for innovation?: A comparative case study of internal and external idea sourcing in the chemical industry.

2016 Proceedings of Portland International Conference on Management of Engineering and Technology (PICMET), 887-901.

Zogaj, S./Bretschneider, U. (2014). Analyzing governance mechanisms for crowdsourcing information systems: a multiple case analysis. Proceedings of the European Conference on Information Systems (ECIS) 2014, Tel Aviv, Israel.

Zuchowski, O./Posegga, O./Schlagwein, D./Fischbach, K. (2016). Internal crowdsourcing: conceptual framework, structured review, and research agenda. Journal of Information Technology, 31 (2), 166-184.

Online References

Sparkassen-Finanzportal (2019a, June 19). Retrieved from <https://www.sparkassen-finanzportal.de>.

Sparkassen-Finanzportal (2019b, June 26). Retrieved from https://sparkassen-mediacenter.de/mediacenter/mediathek/player/extern?id=0_6w3b7v76&autoplay=false

Intranet Demo (2019, June 26). Retrieved from <https://innovation.sparkasse.de/demo>

Appendix

Overview

Appendix A: Interview Guideline

Appendix B: Information Sheet

Appendix C: Informed Consent

Appendix A: Interview Guideline

German:

Research project: Participation in internal crowdsourcing platforms

Interview number: _____ Place: _____

Interview partner: _____ Date: _____

I Aufwärmfragen (Warm-up Part):

1. Was fällt Ihnen ein, wenn Sie an internes Crowdsourcing denken?
2. Was war Ihre jüngste Teilnahme an einem Innovations-/ Innovationsprojekt?
 - 2.1 Nein: Warum haben Sie bisher nicht teilgenommen?
 - 2.2 Ja: Sehen Sie sich als aktiver Nutzer der Plattform? (Warum/Warum nicht?)
3. Wie wurde Ihre Aufmerksamkeit für die Plattform geweckt?

II Hauptteil (Main Part):

Allgemeines

4. Welche Faktoren und Bedingungen sind Ihrer Meinung nach wichtig, um die Beteiligung der Mitarbeiter auf der Crowdsourcing-Plattform zu erhöhen?
5. Was hindert Ihrer Meinung nach der Teilnahme an der Plattform derzeit?
6. Welche Hindernisse haben Sie bei der Verwaltung / Nutzung der Plattform und vor der Nutzung erlebt?
7. Für welche Art von Innovationen ist die Plattform Ihrer Meinung nach am besten geeignet?

Thema: Unternehmenskultur/Klima:

8. Wie würden Sie die Unternehmenskultur/Klima in Bezug auf die Innovationsaktivitäten in Ihrem Unternehmen beschreiben?
9. Glauben Sie, dass die Unternehmenskultur die Teilnahme beeinflussen kann?
 - 9.1 Wie? Warum? Warum? Warum nicht?
10. Welches Klima würde die Mitarbeiter zur Teilnahme motivieren? Gibt es Unterschiede:
 - 10.1 Für die Ideenfindungsphase?
 - 10.2 Für die Phase der Ideenentwicklung?

Thema: Anreize und Belohnungen:

11. Wie werden die Mitarbeiter derzeit zur Teilnahme an Innovationen motiviert?
12. Welche Art von Anreizen oder Belohnungen würden Sie am meisten motivieren?

13. Funktioniert die intrinsische oder extrinsische Motivation besser?
 - 13.1 Welche Anreize funktionieren gut, um Mitarbeiter für die Plattform zu gewinnen?
 - 13.2 Welche Anreize funktionieren gut, damit die Mitarbeiter regelmäßig auf die Plattform zurückkehren?

Thema: Umgebung

14. Welche Art von Umfeld könnte eine häufigere Teilnahme unterstützen?
15. Gibt es Ressourcen, die den Mitarbeitern zur Verfügung gestellt werden sollten, die die Beteiligung anregen würden und nicht ausreichend verfügbar sind?

Thema: Managementunterstützung

16. Welche Art von Führungsstil würde die Mitarbeiter zur Teilnahme motivieren?
17. Mit welchen Aktivitäten könnte die Führungsebene des Unternehmens die Mitarbeiter bei ihrer Teilnahme unterstützen?
 - 17.1 Für die Ideenfindungsphase?
 - 17.2 Für die Phase der Ideenentwicklung?
18. Können verschiedene Managementebenen auf unterschiedliche Weise unterstützen?

Thema: Technologische Fragen

19. Welche technischen Merkmale und Werkzeuge kommen Ihnen in den Sinn, die die Teilnahme erhöhen könnten?
 - 19.1 Für die Ideenfindungsphase?
 - 19.2 Für die Phase der Ideenentwicklung?
20. Wie kann die Technologie dazu beitragen, Mitarbeiter für die Plattform zu gewinnen?

Thema: Andere Faktoren

21. Nachdem Sie verschiedene Faktoren diskutiert haben, die die Teilnahme beeinflussen, kommen Ihnen weitere Faktoren in den Sinn?
22. Haben Sie Erfahrungen gemacht, die Ihre Bereitschaft zur Teilnahme an der Plattform eingeschränkt haben?

III Abschlusserklärung (Final Part):

23. Was sind Ihrer Meinung nach die wichtigsten Faktoren für eine höhere Beteiligung auf Plattformen?
24. Haben wir etwas vergessen, was du sagen möchtest?
25. Möchten Sie das Interview kommentieren?

English:

Research project: Participation in internal crowdsourcing platforms

Interview number:

Place:

Interview partner:

Date:

I Warmup Questions:

1. What do you think of internal crowdsourcing platforms?
2. How was your latest participation in innovation/ an innovation project?
 - 2.1 No: Why have you not participated so far?
 - 2.2 Yes: Do you see yourself as an active user of the platform? (why/why not?)
3. How was your attention aroused for the platform?

II Main part:

General

4. In your opinion, what factors and conditions are important to increase participation of employees on the crowdsourcing platform?
5. What do you think hinders participation on the platform currently?
6. Which roadblocks have you experienced when managing/using the platform and before using it?
7. For what kind of innovations do you think the platform is most suitable?

Topic: Corporate culture/climate:

8. How would you describe the corporate culture/climate in relation to innovation activities in your company?
9. Do you believe corporate culture could influence participation?
 - 9.1 How? Why?
10. What climate would support employees to participate? Any differences
 - 10.1 For the idea generation phase?
 - 10.2 For the idea development phase?

Topic: Incentives and rewards:

11. How are employees currently motivated to participate in innovation?
12. What kind of incentives or rewards would motivate you most?
13. Does intrinsic or extrinsic motivation work better?
 - 13.1 What incentives work well to attract employees to the platform?
 - 13.2 What incentives work well to make employees come back regularly to the platform?

Topic: Environment

14. What kind of environment could support a more frequent participation?

15. Are there resources that should be provided to employees that would stimulate participation and are not sufficiently available?

Topic: Management support

16. What kind of leader/leadership style would motivate employees to participate?
17. By which activities could management level support employees in their participation?
 - 17.1 For the idea generation phase?
 - 17.2 For the idea development phase?
18. Can different management levels support in different ways?

Topic: Technological Issues

19. What are technological features and tools that come to your mind that could increase participation?
 - 19.1 For the idea generation phase?
 - 19.2 For the idea development phase?
20. How can technology help to attract employees to the platform?

Topic: Other factors

21. After having discussed various factors that influence participation, do any other factors come to your mind?
22. Have you made any experience that reduced your willingness in participating on the platform?

III Final Statement:

23. Summarizing the interview, what do you think are the most critical factors for a higher participation on platforms?
24. Have we forgotten something that you would like to say?
25. Would you like to comment on the interview?

Appendix B: Information Sheet

German:

UNIVERSITY
OF TWENTE.



Informationsblatt

Forschungstitel: Participation in internal crowdsourcing platforms
Forschungsbeauftragter: Lucas Richter
Erstellungsdatum: 15.06.19

Sehr geehrte Damen und Herren,

hiermit sind Sie eingeladen, an einer Forschungsstudie teilzunehmen, die sich mit der Frage beschäftigt, wie Sie die Beteiligung von Mitarbeitern auf internen Crowdsourcing-Plattformen erhöhen können.

Einführung:

Am Anfang möchte ich mich noch einmal vorstellen. Mein Name ist Lucas Richter und ich bin Masterstudent des Doppelstudiengangs Innovation Management & Entrepreneurship (Technische Universität Berlin) und Business Administration (Universität Twente). Wie bereits zu Beginn beschrieben, geht es in meiner Masterarbeit um die "Beteiligung von Mitarbeitern auf internen Crowdsourcing/Innovationsplattformen".

Verfahren / Dauer:

Sie nehmen an einem ca. 30-minütigen Interview teil. Die Interviewmethode ist teilstrukturiert und es wird persönlich, per Skype oder Telefon durchgeführt. Ich stelle ihnen Fragen zu der in Ihrem Unternehmen eingesetzten Crowdsourcing-Plattform, wie sie funktioniert und wie Sie sie verbessern können. Wir werden Managementaspekte behandeln, die die Beteiligung der Mitarbeiter an der Plattform erhöhen könnten, wie z.B. Unternehmenskultur oder Unternehmensstruktur.

Mögliche Vorteile / Risiken:

Durch die Teilnahme können Sie die Funktionsweise der Plattform und die Einbindung der Mitarbeiter in eine aktive Beteiligung besser verstehen. Das Unternehmen kann von mehr Ideen profitieren, die gemeinsam von den Mitarbeitern entwickelt werden. Eine finanzielle Vergütung ist nicht vorgesehen.

Es bestehen keine offensichtlichen physischen, rechtlichen oder wirtschaftlichen Risiken im Zusammenhang mit der Teilnahme an dieser Studie. Sie müssen keine Fragen beantworten, die Sie nicht beantworten möchten. Ihre Teilnahme ist freiwillig und Sie können Ihre Teilnahme jederzeit beenden.

English:

**UNIVERSITY
OF TWENTE.**



Information Sheet

Research project title: Participation in internal crowdsourcing platforms
Research investigator: Lucas Richter
Date of creation: 15.06.19

Dear Madame or Sir,

hereby you are invited to participate in a research study designed to explore how to increase participation of employees on internal crowdsourcing platforms.

Introduction:

At the outset I would like to introduce myself once again. My name is Lucas Richter and I am a postgraduate student of the double degree master programme Innovation Management & Entrepreneurship (Technical University of Berlin) and Business Administration (University of Twente). As already described in my request my master thesis is about 'participation of employees on internal crowdsourcing/innovation platforms'.

Procedures / Duration:

You will participate in an interview lasting approximately 30 minutes. The interview method will be semi-structured and it will be conducted in face-to-face or via Skype or phone. You will be asked questions about the crowdsourcing platform in use at your company, how it functions, how to improve it. We will cover management aspects that might increase the participation of employees in the platform, like corporate culture or organizational structure.

Potential Benefits / Risks:

As a result of participating you may better understand the functioning of the platform and how to involve employees in an active participation. The company may benefit from more ideas developed together among employees. A monetary compensation is not provided. There are no obvious physical, legal or economic risks associated with participating in this study. You do not have to answer any questions you do not wish to answer. Your participation is voluntary and you are free to discontinue your participation at any time.

Confidentiality:

Your privacy will be protected to the maximum extent allowable by law. No personally identifiable information will be reported in any research product. Moreover, only trained research staff will have access to your responses. Within these restrictions, results of this study will be made available to you upon request.

Appendix C: Informed Consent

German:

UNIVERSITY
OF TWENTE.



Informed Consent

Forschungstitel : Participation in internal crowdsourcing platforms

Forschungsbeauftragter: Lucas Richter

Vielen Dank, dass Sie das Informationsblatt für das Interview gelesen haben. Wenn Sie teilnehmen möchten, dann füllen Sie bitte das untenstehende Formular aus und unterschreiben es. Bitte unterzeichnen Sie die folgenden Felder, um zu bestätigen, dass Sie mit jeder Erklärung einverstanden sind:

Initialen:

1. Ich bestätige, dass ich das Informationsblatt vom [15.06.2019] gelesen und verstanden habe und Gelegenheit hatte, Fragen zu stellen.

2. Ich verstehe, dass meine Teilnahme freiwillig ist und dass ich jederzeit ohne Angabe von Gründen und ohne negative Folgen zurücktreten kann. Darüber hinaus steht es mir frei, abzulehnen, wenn ich keine bestimmten Fragen oder Fragen beantworten möchte.

3. Ich verstehe, dass meine Antworten streng vertraulich behandelt werden. Ich verstehe, dass mein Name nicht mit den Forschungsmaterialien verknüpft ist und nicht in dem Bericht oder den Berichten, die sich aus der Forschung ergeben, zu identifizieren ist.

4. Ich stimme zu, dass dieses Interview auf Band aufgezeichnet wird. Ich verstehe, dass die Audioaufzeichnung dieses Interviews nur zur Analyse verwendet wird und dass Auszüge aus dem Interview, aus denen ich nicht persönlich identifiziert werden kann, in jeder Konferenzpräsentation, jedem Bericht, jeder Arbeit oder jedem Zeitschriftenartikel verwendet werden kann, der als Ergebnis der Forschung entwickelt wurde. Ich verstehe, dass ohne meine schriftliche Genehmigung keine andere Verwendung der Aufnahme erfolgt und dass niemandem außerhalb des Forschungsteams Zugang zur Originalaufnahme gewährt wird.

5. Ich bin damit einverstanden, dass meine anonymisierten Daten für zukünftige Forschungszwecke, wie z.B. Veröffentlichungen zu dieser Studie nach Abschluss der Studie, gespeichert werden.

6. Ich stimme freiwillig zu, an dieser Studie teilzunehmen.

Name des Teilnehmers

Datum

Signatur

Name des Forschers

Datum

Signatur

English:

**UNIVERSITY
OF TWENTE.**



Informed Consent

Research project title: Participation in internal crowdsourcing platforms

Research investigator: Lucas Richter

Thank you for reading the information sheet about the interview. If you are happy to participate then please complete and sign the form below. Please initial the boxes below to confirm that you agree with each statement:

*Please Initial
box:*

1. I confirm that I have read and understood the information sheet dated [15/06/2019] and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline.

3. I understand that my responses will be kept strictly confidential. I understand that my name will not be linked with the research materials, and will not be identified or identifiable in the report or reports that result from the research.

4. I agree for this interview to be tape-recorded. I understand that the audio recording made of this interview will be used only for analysis and that extracts from the interview, from which I would not be personally identified, may be used in any conference presentation, report, thesis or journal article developed as a result of the research. I understand that no other use will be made of the recording without my written permission, and that no one outside the research team will be allowed access to the original recording.

5. I agree that my anonymised data will be kept for future research purposes such as publications related to this study after the completion of the study.

6. I consent voluntarily to be a participant in this study.

Name of participant

Date

Signature

Research Investigator

Date

Signature

Statutory Declaration

I herewith declare that I have composed the present thesis myself and without use of any other than the cited sources and aids. Sentences or parts of sentences quoted literally are marked as such; other references with regard to the statement and scope are indicated by full details of the publications concerned. The thesis in the same or similar form has not been submitted to any examination body and has not been published.

Berlin, 31st of March 2020

Lucas Richter