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Barriers of SMEs in
Adopting Crowdsourcing and -working
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Barriers of SMEs in Adopting Crowdsourcing and -working and Strategies to Overcome Them

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Foreword

Dear reader,

The concept of crowdsourcing and crowdworking has become increasingly popular in recent years, allowing for the flexible delegation of tasks to an unknown number of people. This enables faster task completion, as the concept harnesses the collective intelligence of the crowd, allowing individuals to focus on their core competencies. Examples of tasks commonly outsourced to the crowd include logo design, website programming, and creating product descriptions. Large companies such as Bosch, Airbnb, GE, and Coty regularly make use of crowdworking and crowdsourcing. However, small and medium-sized enterprises (SMEs) tend to use this form of online labor market minimally or not at all.

This report aims to present the barriers that SMEs perceive when it comes to implementing crowdworking and crowdsourcing. We will explain the role of the organizational level, employee perspective, and leadership in this context. Subsequently, we will identify strategies and steps that SMEs can employ to successfully implement crowdworking within their organizations.

The goal of this report is to raise awareness of this new working concept and encourage SMEs to embrace crowdworking. In doing so, we not only contribute to expanding the literature on crowdsourcing, working in the crowd, and crowdworking but also provide theoretically derived insights relevant to the practical implementation of online labor, specifically crowdwork, particularly for SMEs.

Kassel, July 2023   The Authors

Content

Abstract

Despite its undisputable benefits for firms, crowdsourcing and -working is currently rarely applied in small and medium sized enterprises (SME). Up to now extant literature provides only an incomplete picture of the barriers that hinder SMEs from adopting crowdsourcing and -working. Because of these incomplete insights on this phenomenon there is also a great deal of uncertainty on how to overcome these barriers. In the scope of an interview series with 15 SMEs we explore a range of different barriers. In a second round of interviews with crowdsourcing and -working experts (Delphi study) we reveal strategies that may help SMEs to overcome these barriers. The findings from these two studies not only expand the so far incomplete body of knowledge but also provide practical references for SMEs to overcome the barriers and to adopt crowdsourcing and -working for their value creation activities.

Keywords: SME; Crowdsourcing; Crowdworking; Qualitative interviews, Delphi study

1 Introduction

Crowdsourcing and -working are flourishing. Both phenomenons are used by enterprises as a strategy to outsource certain tasks to an unknown mass of people via the internet (Majchrzak/Malhotra 2020; Durward/Blohm/Leimeister 2020). It enables organizations to get external support for different value creating activities. For example, Starbucks applied crowdsourcing for their new product development (NPD). They were asking the crowd for ideas to improve the experience at the coffee place. For more than 10 years Starbucks customers (representing the crowd) were called to upload their improvement suggestions to a platform called "*MyStarbucksIdea.com*" (Hsiang/Rayz 2020; Bretschneider/Leimeister/Mathiassen 2015). This way, splash sticks (which keep to-go drinks in the cup), new coffee creations and free in-store Wi-Fi were introduced (Hsiang/Rayz 2020).

Another example involves PepsiCo, who applied a crowdsourcing strategy for their marketing activities. PepsiCo ran several crowdsourcing campaigns, called "*Do Us a Flavor*", for its potato chips brand "Lay" (Sanz-Blas/Tena-Monferrer/Sánchez-García 2015). Different new potato chip flavors were handed in by individuals. To identify the most popular ones, the crowd could vote on their preferred suggestion. After the campaign was completed, PepsiCo brought the three most popular flavors to the market (Sanz-Blas/Tena-Monferrer/Sánchez-García 2015).

As of today, especially large companies benefit from crowdsourcing and -working. Despite its increasing recognition, dissemination, and success in larger organizations, crowdsourcing and -working is rarely applied in small and medium sized enterprises (SMEs) (Mrass 2017; Qin et al. 2016). This observation is surprising since adopting crowdsourcing and -working seems to be particularly worthwhile for SMEs. In general, SME are known to have limited manpower for completing tasks that are outside their core competence (Erickson 2012; Nakanishi/Syozugawa 2021). Thus, crowdsourcing and –working would provide great potential to reduce employee's workload. Furthermore, SMEs are discussed to have less bureaucracy and shorter decision-making processes which per se is attractive for applying crowdsourcing and -working.

So far, the reasons why SME are shy of applying crowdsourcing and -working have been insufficiently researched. Existing literature only provides an incomplete picture of the barriers that hinder SMEs from adopting these strategies (Qin et al. 2016). Because of these incomplete insights on barriers, there is also a great uncertainty on how to overcome them (Qin et al. 2016).

Against this background, the aim of this paper is to identify and describe barriers that SMEs face when applying crowdsourcing and -working. We further aim at empirically identifying strategies that encourage SMEs to overcome these barriers. The underlying research question is as follows:

"Which barriers hinder SME in adopting crowdsourcing and -working in their value creation and what strategies can be applied to overcome these?"

For exploring the barriers, we applied a qualitative research approach. We interviewed 18 representatives from 15 SMEs. For identifying the strategies that help SMEs to overcome the barriers we conducted a Delphi study, including eight experts. The findings from our two studies do not only expand the so far incomplete body of knowledge, but also provide practical references for SMEs to overcome the barriers and to adopt crowdsourcing and –working for their value-creating activities.

2 Theoretical Background

2.1 Crowdsourcing and Crowdworking

In this paper, we define crowdsourcing and -working as a process of sourcing out a task to an anonymous group of people via the internet. This definition is inter alia in accordance with Nakanishi & Syozugawa (2021), Blohm, Leimeister & Krcmar (2013), Estellés-Arolas & González-Ladrón-de-Guevara (2012) and Afuah & Tucci (2012). While this characteristic holds true for both crowdsourcing and crowdworking, in other aspects both phenomenons differ from each other: Crowdsourcing is typically characterized by no monetary remuneration to the crowd for fulfilling the outsourced tasks (Blohm/Leimeister/Krcmar 2013; Durward/Blohm/Leimeister 2020; Leimeister et al. 2009). In some cases, however, the crowd receives freebies, but in most instances, the crowd is not compensated as they are incentivized to contribute to organization's value creation by intrinsically or hedonic motives (Estellés-Arolas/González-Ladrón-de-Guevara 2012). Another characteristic of crowdsourcing is that the tasks are broadcasted to the crowd. This means that a crowdsourcer (i.e., a company, an institution, a non-profit organization, or an individual) outsources a task in an open call to an undefined group of crowdsourcees (Howe 2006). Some crowdsourcees then autonomously takes over and performs the work (Howe 2006). Afterwards these crowdsourcees submit the completed tasks back to the crowdsourcer (Howe 2006). The cases introduced in the Introduction are typical examples of crowdsourcing.

Crowdworking differs from crowdsourcing. Crowdworking is "…*the outsourcing of digitally processible tasks as paid work to a global workforce via Internet platforms such as Amazon Mechanical Turk (AMT), Upwork or Freelancer*." (Pongratz 2018). Crowdworking can be compared to established employment patterns in traditional working environments with the only difference that in crowdworking the whole work process is processed online on an Internet platform: from initial instruction to the final transfer of results and their evaluation (Pongratz, 2018, p. 58). So, in the context of crowdworking, individual crowd members are extrinsically motivated by the goal of creating income via online labor (Durward/Blohm/Leimeister 2016). Beside this, the crowdworking[1] process differs from a crowdsourcing as follows: As in crowdsourcing, the person who aims at delegating a task (crowdsourcer) defines the task and prepares an open call. The second phase of the crowdworking process is induced by a placement of an open call through the crowdsourcer (like in crowdsourcing processes). Instead of autonomously taking over the task the crowdworkers then apply for taking over the task. The crowdsourcer then selects the most convenient, before the he and the appropriate crowdworker agree on a price for fulfilling the task.

Some scholars put crowdworking on a level with the above-described crowdsourcing concept (Barnes et al., 2015; Durward et al., 2016). However, because of the significant differences (concerning the unpaid and paid compensation as well as the underlying process) crowdsourcing has to be distinguished from crowdworking.

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[1] While the term crowdworking has emerged as the dominant term in this discourse, several alternative namings are used as well, e.g. online labour, on-demand work, online outsourcing, gig economy or online freelancing Taylor/Joshi 2018.

In the context of crowdsourcing and crowdworking, one differentiates between micro and macro tasks. Micro tasks cover parts that are repetitive and can be done without a certain set of skills (Gol/Stein/Avital 2019; Stefano 2015). Completing surveys, tagging images, testing webpages, or translation task are typical microtasks. These assignments are easy and clear to describe, they can be completed within a short period of time. Due to higher complexity, macrotasks require skilled workers. Macrotask typically announced for new product development projects, for designing logos or developing ideas (Majchrzak/Malhotra 2013; Boons/Stam 2019).

In crowdsourcing as well as for crowdworking, the ensuing interaction processes unfolds over specific IT-and Internet-based platforms, representing the (single) point of contact between the crowdsourcer and the crowd, thereby functioning as the medium through which all work processes and activities are managed (Kittur et al. 2013). Typically, an independent intermediary runs these Internet platforms and provides a virtual service by connecting the crowdsourcer with the crowd, thereby functioning as marketplaces (Kittur et al. 2013). These Internet platforms have different foci. Some specialize on crowdworking (e.g., Amazon Mechanical Turc or upwork) others focus on crowdsourcing. Moreover, platforms differ contextually. While some platforms focus on microtasks, others aim attention at macotasks, such as design tasks or smaller development tasks.

2.2 SMEs in Germany

With over 95% of all companies in Europe and over 99% of all companies in Germany, SMEs present an important building block for the European economy. According to the European Commission, SMEs are organizations that "*employ fewer than 250 employees and have either an annual turnover not exceeding 50 million Euro or an annual balance sheet total not exceeding than 43 million Euro*" (Europäische Kommission 2015). If these values are exceeded, the organization is defined as a large organization. According to Becker & Ulrich (2009) those quantitative categories only represent approximate values to identify SMEs. Common qualitative categories to classify organizations into SMEs include (1) the company's economic and legal independence, (2) the unity of ownership, control, and management as well as (3) a close link between the company and its owners (Hausch 2004, 15).

According to Berrone, Cruz & Gomez-Mejia (2012), the SMEs employees' personal commitment, their company loyalty (Miller/Le Breton-Miller 2006) and the innovation potential of the firms make SMEs candidates for successfully introducing digital transformation and new ways of working. Low hierarchy levels, short decision paths and flexibility are further characteristics that distinguish SMEs from larger organizations. Due to less employees the organizational structure of SMEs is less complex and there are fewer hierarchical levels than there are in large organizations. This organizational form results in short decision paths. All these conditions theoretically simplify adopting crowdsourcing and -working in organizations (Berrone/Cruz/Gomez-Mejia 2012a). However, introducing changes and new ways of working in SMEs can be challenging. Developing and building up capabilities for those changes represents additional effort for traditional oriented organizations (Soluk/Kammerlander 2021; Nambisan et al. 2017; Sambamurthy/Bharadwaj/Grover 2003; Yoo 2013). SMEs often associate such changes with additional costs and effort. Crowdsourcing and -working is not perceived as suitable for everyday use (Gómez-Mejía et al. 2007). Furthermore, SMEs do not associate long-term benefits such as sustainable competitiveness by exploring new horizons in the digital environment (Soluk et al. 2021).

3 Research Design

Our research design is composed of two methodological approaches. To identify barriers that SMEs face when introducing crowdsourcing and -working, we conducted qualitative interviews. For developing strategies that SMEs can implement to overcome the barriers that they are facing, we conducted a Delphi study.

3.1 Qualitative Interviews

To identify barriers that SMEs face when introducing crowdsourcing, we conducted 15 open interviews with 18 site managers, managing directors and CEOs from different industries. Interviewees were asked to freely explain their personal attitudes, values, beliefs, and views on crowdsourcing. Unstructured interviews allow an extensive interaction with the interviewees uncover unexpected or unanticipated information. Therefore we carried out the interviews as unstructured as possible (Schultze/Avital 2011). Because of the uncertain pandemic situation during the data collection period, 60% of the interviews were conducted via video or telephone conference. The remaining six interviews were carried out on-site at the respective organizations. The discussions lasted between 60 and 100 minutes and were recorded with prior consent.

In line with Strauss and Corbin's grounded theory approach, we involved new insights and discussion questions in the interviews that developed throughout previous interviews (Charmaz 2014). During the conversations, we started with general questions about the company, the interview partner and their experience with crowdsourcing and crowdworking. In the main part of the interview, we investigated current barriers that SMEs face when crowdsourcing. We asked the interlocutors about reasons for their reluctance regarding the usage of Crowdworking and challenges for not implementing this new way of working. In the final part of the interview, we gave them the opportunity to share anything with us that was not mentioned yet.

After conducting and transcribing the interviews, we started rereading all statements. This allowed us to cluster the different phenomena that we identified based on the open coding procedure. After clustering, labelling, and conceptualizing the different phenomena, we added a label to each of the clusters (Strauss 1997). The resulting codes presented the basis for the axial coding process, in which we grouped similar codes. For each of the code groups we identified a category (= heading). Interlinking these categories allowed us to phrase theory building blocks for the analyzed research question. In part 4 of this paper, we present our findings in detail.

3.2 Delphi Study

A Delphi study, also known as Delphi method or Delphi survey, is frequently applied when experts are consulted to make medium term predictions in the field of research (Varona/Capretz 2021).

Before starting the study, the researcher defines the circumstances and the time frame in which the prediction is to be made (Varona/Capretz 2021). Experts with certain knowledge and experience in the analyzed context are chosen and recruited. After agreeing to share their knowledge and to contribute to research, experts get introduced to the study's setup and context. After the introduction, they receive a first questionnaire which is characterized by general questions (Varona/Capretz 2021). As the

Delphi method is characterized by a repetitive process, the results of the first questionnaire serve as a basis for the second one. In the second questionnaire more specific questions are posed.

The number of questioning rounds depends on the pursued goal of the study. As we focused on consensus building, we ended the iteration after round 3. According to Wechsler (1978) and Häder (2014), results are considered as valid as soon as more than two iteration rounds are completed. After collecting all data, we evaluated and analyzed the responses.

Unlike group discussions, Delphi questionnaires have the advantage that social psychological effects can be avoided (Gordon/Helmer 1964). The anonymity created by formalized questionnaires prevents respondents from exerting influence on each other. Participants find it easier to change their minds or to insist on their own, possibly contrary, opinions when they are not surrounded by other respondents (Cuhls 2009, 210). Depending on the analyzed field, the expert group can range from a few experts (around five) to more than 100 experts (Varona/Capretz 2021). Like many other methods, the Delphi method and its setup need to be repeatable.

Since we want to understand current and future strategies that SMEs apply to overcome barriers when executing crowdsourcing, we decided to work with the Delphi method as a form of expert consultation. Based on our findings generated with that approach, we present empirically developed strategies for SMEs to overcome existing barriers. The experts that we selected for the study are managing directors, crowdsourcing experts or have higher management positions in SMEs. Due to a low popularity and a limited number of experts in our research field, eight experts contributed to our investigation. As indicated by Varona & Capretz (2021), we thereby ensures that we obtain high-quality data resulting from the Delphi study.

4 Barriers of adopting Crowdsourcing and -working

Throughout the analysis process of the interviews, we identified six major barriers that SMEs face when establishing crowdsourcing and -working.

4.1 Risk of Quality Issues induced by the Crowd

The first barrier that SMEs are confronted with when applying crowdsourcing and -working is the risk of quality issues induced by the crowd. This finding gets supported by Greineder & Blohm who emphasize that crowdsourcing "*is not only about evaluating the output but also about carrying out secondary tasks such as finding errors, identifying duplicates and providing targeted feedback.*" (2020, 12). As SMEs follow a niche or a one product strategy, their business depends on few customers (Santoro et al. 2018). A faulty and substandard performance of tasks that leads to quality issues can contribute to existential threats for SMEs (Raymond/St-Pierre 2004). Here it has to be considered that faulty work results have greater existential consequences for SMEs than similar deficiencies can have for large companies (Qin et al. 2016). As large companies are more diversified in terms of products and have more clients, they have a higher chance to continue their business in case they lost one or more clients due to quality flaws. In this context, two interviewees stated that in case of poor-quality products or services SMEs might face image losses, lawsuits, and complaints, which, depending on their extent, can drive SMEs into insolvency (interviewee 3 and 4).

The risk of quality issues can be explained by the principal agent theory and the associated information asymmetries. The principal (in our case the crowdsourcer = SME) and the agent (in our case the crowdsourcee) have conflicting interests as both are acting according to their own best benefit (Sappington 1991). While SMEs want the crowdsourcees to provide high-quality solutions at low prices, the crowdsourcees want to complete the job as fast as possible and with as little effort as possible. This brings the crowdsourcers (= principal = SME) in an underprivileged situation as crowdsourcees (= agent/s) do focus on completing the task as fast as possible. Consequently, the quality expectations of SMEs are often higher than the quality delivered by the crowdsourcees. Interviewees fear that tasks have to be executed again by the crowd due to lack of quality ((Qin et al. 2016); interviewee 3, 4, 7). This would result in double the workload and thus crowdsourcing would lose its attractiveness (Qin et al. 2016; interviewee 4). Furthermore, the quality of work results is also influenced by the qualification of the worker conducting the task. In this regard it has to be considered that the credibility of a person's qualifications and experiences given on crowdworking-platforms is lower than that provided by a certified copy attached to a conventional job application ("*Having a job reference on paper is different from mentioning it online that you worked for VW, Mercedes or whomever.*", interviewee 2, "*I needed to check the qualifications of the people that work for me.*", interviewee 4). These uncertainties necessitate an intensive quality evaluation by internal employees (interviewee 6). Thus, whenever crowdsourcing is practiced, it is important to "*ensure that the quality management system established in the company is also applied […] by the crowd*" (interviewee 15). But getting hired for different projects and by different organizations makes it impossible for the crowd to familiarize themselves with different internal processes of firms and quality expectations (interviewee 2, 13, 14, 15). Furthermore, opening sessions which are identified as substantial in quality and project management cannot be implemented if the crowd is overtaking certain tasks ("*In practice, I ideally have a kick-off in which all participants or project/planners, programmers are meeting. That facilitates being on the same boat*

from the beginning of the project on. I am able to say: 'This is where we are, and this is where we want to go.'", interviewee 1).

4.2 Transaction Costs and the Management's Reluctance towards Crowdsourcing and -working

The second barrier that we identified is the management's reluctance towards crowdsourcing and -working. The managing directors of SMEs are often experienced executives. Because of their often traditional and conservative mindset, they have little interest in innovation, new organizational forms, or novel work approaches (Morck/Yeung 2003; Gómez-Mejía et al. 2007, 134). Their mistrustful perspective on digital technologies intensifies the unwillingness to engage with digital initiatives (Soluk/Kammerlander 2021). This hesitation impedes the usage of crowdsourcing and -working in SMEs (interviewee 15).

Because of their traditional ways of doing business, managers in SMEs prefer to hire permanent employees over crowdworkers ("*Of course, in a traditional company, for instance a 150-year-old traditional company, a CEO won't be in a situation of cost pressure. Therefore, he would rather hire someone fulltime instead of dealing with Textbroker.*", interviewee 9).

Another issue is the coordination effort that comes along with crowdsourcing. Before the crowd overtakes a task, an appropriate group and a suitable platform needs to be identified. After having determined both, a precise task description is written. Here the central challenge is to describe and communicate the task clear and unambiguous ("*You need to know how to ask questions correctly and understand them accordingly. It's always a question of what you write or how the other person understands it.*", interviewee 12; "*Yes, we have to, for example, work packages, they have to be described more detailed as the tasks are complex*", interviewee 1). Otherwise, work results will not meet the desired quality requirements. Furthermore, implementing new forms of labor comes with load and the effort of coordinating crowdworkers can be time-consuming. Those coordination and transaction costs need to be lower at any time than the effort that it takes to complete the task inhouse. The interviewees fear that the coordination effort is more time intensive than doing the job themselves ("*then I need to do the work twice. As soon as I signed [the transmittals] I am the one that needs to make sure that the transmission is safe. If it's not safe, then I need to recalculate it. That means that I don't save anything.*", interviewee 8).

As many SMEs are offering specialized goods and services, the interlocutors perceive it as difficult and "*in some cases [as] impossible*" to find an appropriate crowdworker (interviewee 5). Projects and tasks that require specific knowledge are not suited for being handed over to a crowdworker (interviewee 4). In addition to a possible lack of qualifications, managers fear that crowdworking does not fit into the organizational structure (Berrone/Cruz/Gomez-Mejia 2012b, 269). According to Qin et al. (2016), managers "*[have a] (1) lack of awareness of crowdsourcing systems and applications, (2) fear changing established business models, (3) [have] trust and confidentiality issues in the open and digital environment, and (4) [they] lack appropriate and flexible platforms that meet the contextual, relational and situational needs of SMEs.*" (1062). Interviewee 3 underlines that having a well-established business partnership and knowing the partner's quality expectations is particular valued by SMEs but is not possible when working with a crowdworker ("*The company placing the order will not know everything about the crowdworker and thus will ask itself: Who am I working with*?", interviewee 3).

Having heard about negative incidents such as underestimating the required coordination effort and "*facing something new*" hinders managers of SMEs from introducing crowdsourcing or -working (interviewee 10). Unawareness and low likelihood of diversifying technologically (Berrone/Cruz/Gomez-Mejia 2012b, 260) are further reasons for managers' reluctance towards crowdsourcing in SMEs. Strategies and approaches need to be identified to make on-demand work force more attractive. Losing the SMEs' identity by introducing crowdsourcing and -working is a further concern that managers have. This phenomenon is known as the "*not invented here syndrome*" (interviewee 14, 15). The "*not invented here*" and "*not sold here*" syndromes describe the aversion against ideas that were developed externally and also exist in lager organizations (Dubouloz et al. 2021, 116).

4.3 The Employee's Reluctance

The third barrier that SMEs face when establishing crowdsourcing and -working is the employees' reluctance. New ways of on-demand work force models contradict the close personal relationships that colleagues in SMEs have. These intra-organizational relationships are more important than in larger companies as they are relevant for the company culture of SMEs (Kmecova/Tlusty 2021).

When new ways of flexible working are implemented, permanent staff fears losing their job and fear losing the positive working atmosphere ("*In general, it can be said that the extreme competition between the individuals in the creative crowd can cause a toxic work climate.*" (Schmidt 2017b, 18)). Having external workers taking part in everyday business increases the pressure and competition between permanent employees and crowdworkers ("*That means you become an internal freelancer, so to speak, and that's sometimes not nice when working, because you are seen differently. You are no longer seen as an essential component in terms of appreciation and so on.*", interviewee 8).

There is also another source for employees' reluctance that occurs particularly in family-owned SMEs. In this special form of SMEs, the social relationship among the family, who owns the firm, and the employees plays an important role, as Berrone, Cruz & Gomez-Mejia found in an empirical investigation. They found that there are binding social ties between the family, who owns the firm, and the employees (Berrone/Cruz/Gomez-Mejia 2012b, 259), which is deeply rooted in the core of the culture of a family-owned company. In our interviews we found that employees anticipate and fear that this specific core value may get lost as soon as the crowd overtakes tasks.

4.4 The Risk of Losing Sensitive Information

The fourth identified barrier is the increased risk of losing sensitive information when applying crowdsourcing and -working. The secrets of SMEs and their sensitive information are often protected with patents, trade secrets or copyrights. These copyrights on an invention are extremely relevant for the value creation of SMEs. This is the more relevant against the following background: Many of SMEs have been successful with one and the same product, which they once invented, for many years. In many cases the patent protected product is still a cash cow of an SME. As SMEs mainly depend on this product, they fear that important information can be stolen or taken over when applying crowdsourcing or -working. While bigger organizations are more diversified, SMEs need to fear bankruptcy as soon as a patent or product idea leaves the organization.

Next to disseminating intellectual property, the interviewees fear the weak data protection in the country of origin of a platform ("*From an IT perspective transferring data via "WeTransfer" or "Drop-box" or whatever they're called is prohibited. In terms of data protection [we have to ask ourselves] again, where is the [platforms'] server and where is the service? Is it located in the US, in Russia, Israel or Europe?*", interviewee 2)).

4.5 The Inability of taking Advantage of absorptive Capacity

Another issue, which we learnt from our interviews, mainly concerns crowdsourcing. As soon as the crowd has completed a task in a crowdsourcing project, submitted solutions need to be screened. Gathering and evaluating these contributions often is time-consuming and presents additional effort for SMEs ("*As an SME, we are busy with our tasks. I need the crowd to do the work for me and I don't have the capacity to control and coordinate them permanently.*", interviewee 1). Thus, SMEs often fears absorptive capacity problems when engaging in crowdsourcing. In general, absorptive capacity is *"[the] ability to recognize the value of new information, assimilate it, and apply it to commercial ends*" (Cohen/Levinthal 2008, 128). It refers to the ability of a recipient to assimilate value and use the knowledge transferred. In other words, the phenomenon of absorptive capacity puts organizations in a situation where they are flooded with solutions and ideas (Cohen/Levinthal 2008). Adapted to our context, this means that most SMEs cannot make use of the crowdsourcing concept as they do not have the resources for sighting and evaluating all solutions handed in by the crowd (interviewee 1, 2, 4, 8, 10).

4.6 Legal Requirements

The sixth barrier that SMEs fear, when applying crowdsourcing or –working, results from legal require-ments. Since the outsourcing of tasks through an SMEs via crowdsourcing or –working platforms typi-cally is not contractually entitled, (Gimpel et al. 2020; interviewee 4), SMEs have only limited legal claims against the crowd especially regarding poor quality products or services that are delivered to the customers of an SME.

Next to this, legal guidelines and standards generally are highly complex in the SMEs' business envi-ronment. These requirements include legal standards which are extremely relevant for SMEs following a niche or a one product strategy. Getting familiar with those takes time and has to be ensured by a proper qualification of the crowdworkers („*I can't just handout certain tasks to someone who has a good idea, but they also have to know and understand the industry specific rules and quality require-ments.*", interviewee 5). But as many SMEs are offering specialized goods and services, the interlocu-tors perceive it as difficult and "*in some cases [as] impossible*" to find an appropriate crowdworker (interviewee 5). This shows that even though crowdsourcing has great potential for SMEs to get exter-nal knowledge and a great variety of ideas, the interviewees and literature agree that „*not every job can be outsourced to the crowd*" (Schmidt 2017a, 23; interviewee 2, 4, 14).

5 Strategies to Overcome Barriers

In the following, we present strategies for SMEs to overcome existing barriers when applying crowdsourcing and -working. Those strategies were empirically identified in the context of a Delphi study described in 3.2.

5.1 Strategies to overcome Risk of Quality Issues induced by the Crowd

Overcoming quality issues due to information asymmetry is demanding. The information asymmetry is subjected to the principal agent theory. The Delphi study reveals that selecting the crowdworker carefully can reduce this conflict of interest. To support the crowdworker selection process, platforms provide (one to five stars) ratings and assessments to indicate a crowdworker's performance in previous jobs (interviewee 13, 14).

A further result of the Delphi study is that it is necessary to generate as many details as possible about the crowdworker. Therefore, SMEs can request further documents and reference letters/projects from them. Those documents and references are collected and evaluated in addition to those that are already uploaded to the platform. This process enables SMEs to better assess crowdworkers and ultimately select the most suitable one. To avoid delivering inadequate products or services when crowdworking is implemented, regardless of an extensive candidate screening, each completed task requires quality control measures carried out by internal employees. The intensiveness of these measures differs depending on the task characteristics and the relevance of the task for the SME. The results of the Delphi study show that giving the crowdworkers clear directions and expectations (especially regarding quality requirements), combined with appropriate coordination and feedback reduces the risk of quality issues or duplication of work. However, permanent employees are kept away from their core competences and main tasks during the time of coordinating the crowdworker (interviewee 11). Whenever realizing crowdworking, it is important to ensure that its coordination effort is lower than the effort for implementing the task inhouse (Qin et al. 2016, 1061)). The coordination effort includes (1) clearly defining the task, (2) identifying a suitable crowdworking platform, (3) uploading the description to the platform and (4) chose a candidate among the applicants (Greineder/Blohm 2020, see figure 1).

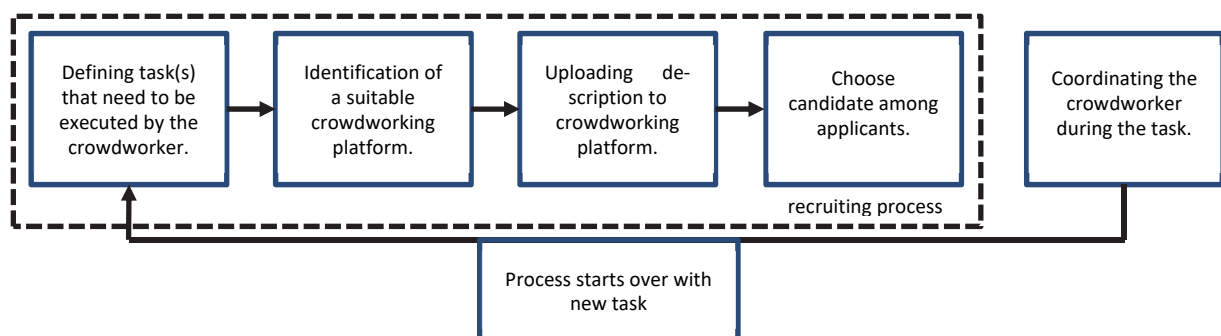Figure 1: Crowdworking recruiting and coordinating process (inspired by Greineder and Blohm 2020, 8).

To ensure quality when applying crowdsourcing, SMEs may deploy agile approaches regarding the coordinating process instead of acting in accordance with traditional quality management methods (e.g. product requirements documents). The participating experts in the Delphi study indicate that including

scrum methods when managing crowdworkers empowers both the crowdworker and the hiring organization. Familiarization periods can be handled most efficiently by embedding the crowdworker into regular sprints including its planning and review phases. Since managers in SMEs are often applying conventional leadership methods, it necessitates them and internal employees to get familiar with scrum and agility. After successfully implementing it, crowdworkers can be included in the respective teams and sprints. This facilitates coordination, builds up trust and regular delivery updates are given.

5.2 Strategies to Overcome the Transaction Cost Challenge and the Management's Reluctance

The Delphi analysis reveals that overcoming the management's reluctance can be reached by a general conviction. Experts feel confident that reluctant executives will be inspired by suppliers and other business partners once they have successfully implemented crowd-based work and share success stories. This makes it more likely that hesitant managers will be more open to this new form of work. Raising awareness, sharing best practices and launching pilot projects are three important steps that experts define to overcome the management's reluctance towards crowdsourcing and -working in SMEs.

Furthermore, the Delphi study experts state that inaccurately formulated task descriptions lead to an increase in control effort which is an outcome that SMEs want to avoid. Therefore, SMEs should spend adequate time on formulating the task. This time is clever invested when seeing the whole crowdsourcing/-working process. The more detailed the task description, the lower is the chance of misunderstanding it. This results in a lower coordination effort with the crowdworker and a better work quality so that double workload can be avoided.

After SMEs have successfully completed the introduction phase, the learning curve ensures a decrease of errors and an increase in efficiency in the long run. Before taking advantage of the learning curve and decreasing transaction costs that come along with crowdsourcing, SMEs need to get familiar with the concept of giving a task to an undefined crowd and need to develop clear processes to follow when it is applied. Next to the learning curve that SMEs develop over time, Greineder & Blohm (2020) identified that regular collaborations between crowdworkers and an organization lead to a decline in coordination effort. Trust between crowdworkers and SMEs can be built up as soon as crowdworkers get hired by the same firm more often ("*Interviewees in both companies pointed out that the benefits created when people worked together over several projects greatly reduced the coordination effort*" Greineder/Blohm 2020, 12). Additionally, the crowdworkers' performance improves over time due to their learning curve. Thus, less of the permanent employees' time is tied up.

To simplify building up a (business) relationship between SMEs and crowdworkers, SMEs wish for having the opportunity to directly communicate with them. Having the chance to contact each other easily permits and supports reciprocal exchange. Lack of clarity can be prevented, and further inquiries can be eliminated. So far, SMEs and crowdworkers can only communicate via the crowdworking platform that matched them. This has legal reasons. In case of a complaint, the messages sent via the platform present the basis for deciding which party is legally right.

5.3 Strategies to overcome the Employee's Reluctance

Next to raising awareness among managers, experts in the Delphi study point out that developing an understanding in the crowdsourcing/-working context and testing it is equally important among employees ("*But our staff and employees, who are supposed to drive this [new way of working] forward and use it, first have to be made aware of it and then get used to it. Raising awareness is important to build up a willingness of applying it.*", expert 2). This is the reason why an adequate change management process is necessary, especially regarding a clear, open, and transparent communication strategy. Employees need to understand that tasks given to the crowd should support them and that crowdworkers do tasks that lay outside the staff's core competence. As soon as the permanent employees understand that the aim of hiring a crowdworker is to overtake tasks that are perceived as annoying, its acceptance is expected to increase (expert 4, 7). Throughout the whole change management process, it needs to be made clear that the permanent employees' core competencies cannot be replaced by the crowd. Sharing best practices and experiences among businesses and employees is another strategy to introduce crowdsourcing/-working transparently.

5.4 Strategies to avoid losing sensitive Information

As mentioned in 5.2, it is advantageous if SMEs collaborate with the same crowdworkers frequently (Greineder/Blohm 2020). Like in any business relationship, trust between a crowdworker and a SME is essential and can be built up over time. However, in the context of crowdsourcing and -working and as crowdworker stay anonymous, trust issues exist. The related principal agent theorem and the related conflict of interest is another reason why a tool is needed to align the interests. This is why new approaches need to be found in the context of crowdsourcing and -working.

When collaborating for the first time, experts point out that it is best for SMEs to protect themselves with non-disclosure agreements (NDAs) against data theft. Despite NDAs with "*100% of all inquiries*" reconciled in advance, there is no guarantee for SMEs that crowdworker follow all predefinitions without passing on insights to competitors, the market or make use of these themselves (expert 3, 4, 5). NDAs, however, reduce that risk and are a useful tool to protect sensitive information in SMEs. One expert concluded that "*creating confidentiality is one of the most critical challenges for the analyzed crowd solving systems*" (expert 8). This is confirmed by the study from Zogaj, Bretschneider & Leimeister (2014). In their study, these authors also propose NDAs in order to provide secrecy before tasks are given to crowdworkers.

Due to the number of participants in the anonymous crowd, agreeing upon individual NDAs is not suitable for crowdsourcing, but in the case of crowdworking. Acceptable use policy and confidentiality agreements allow SMEs to secure themselves from losing sensitive information. So, before getting access to the task, each crowdworker should be enforced to agree with the use policy and confidentiality agreements.

5.5 Strategies to take Advantage of absorptive Capacity

In the case of crowdsourcing, SMEs have limited resources for screening the total amount of answers and solutions handed in by the crowd, which hinders them to adopt crowdsourcing and –working (see above). We empirically identified that handing over the evaluation process to the crowd allows SMEs to benefit from absorptive capacity. Thereby, SMEs can specify the number of contributions they want

to evaluate themselves (the best 5%, the best 20 ideas or all those honored with 5 stars). The bigger the crowd that ranks the contributions the better the result's quality.

After the ranking is completed, the pre-selected contributions are handed over and evaluated by the SMEs. The best contributions can finally be implemented by the SMEs or present a basis for further development. So, letting the crowd be part of the evaluation process allows SMEs to take advantage of absorptive capacity efficiently. No additional in-house resources are bounded. At the same time, SMEs are including lead users and/or future customers in the process of solving company relevant tasks. It makes crowdsourcing even more attractive in two respects: SMEs get new and free ideas and do get them ranked according to popularity.

5.6 Strategies to make the Crowd comply with SME's specific legal Requirements

Clearly defining tasks is relevant whenever tasks are handed over to a crowd or an individual in the crowd. Experts highlight that the more complex and specific a task is, the more detailed the task description needs to be (expert 1, 3, 4). Due to specific (legal) requirements resulting from laws, guidelines, standards etc. in SMEs' environment, descriptions need to be more detailed than descriptions for tasks that do not require certain (legal) requirements. Therefore, SMEs should spend adequate time on formulating the task, especially regarding the mentioning of relevant legal requirements which have to be considered when conducting the task.

A second strategy that we identified on the basis of the Delphi study and that particularly concerns crowdworking is the importance to build long-term relationships with the crowdworker. This enables SMEs to sensitize them for SME's specific legal requirements. The longer and the more often they collaborate, the more is the crowdworker aware of the SME's relevant requirements and expectations.

6 Conclusion

6.1 Limitations and Future Research

Our study provides a broad insight in barriers that SMEs hinder from implementing crowdsourcing and -working. The basis for our results are 15 conducted interviews. One limitation of our study is that we interviewed managers and department heads but did not talk to the workers who play an important role in implementing crowdsourcing. In a future research, their perceptions should be compared to our findings, which would allow for detecting discrepancies. Another limitation concerns the short duration of our study, which limits the gained insights. A longitudinal study might reveal other or additional valuable insights with respect to the identified barriers. A third limitation is that we focused on SMEs in one country, only. As we did not include interview partners working for SMEs outside Germany, the generalizability of our results is limited. Taking our study and results as a basis and conducting the same investigation in other countries would increase the results' generalizability and country-specific barriers and strategies could be identified.

6.2 Contribution to Theory and Managerial Implications

This research offers both academic and practical value. As it concerns the academic value, our research contributes to the body of knowledge on crowdsourcing and -working. Although scholars are looking at these phenomenons for many years now, research on the barriers of SMEs in adopting crowdsourcing and -working is still in its infancy. Qin et al. (2016) are one of the rare scholars who did research in this field. For example, Quin et al. (2016) identified „*unawareness of tools/models*" as well as „*no appropriate platforms*" as barriers that hinder SME from adopting crowdsourcing. However, these insights solely cover the technical view on the phenomenon and only focused on crowdsourcing. At large, extant literature so-far provides only an incomplete picture of the phenomenon of interest. Against this background, our findings cover the managerial and organizational perspective of crowdsourcing and –working and therefore expand the body of knowledge by providing additional perspectives.

This study also provides validation of two specific barriers that already have been partially identified by Quin et al. (2016). In their work Quin et al. (2016) propose "*internal culture*" as well as „*trust/confidentiality issues*", which correspond with our „*Employee's Reluctance*" respectively "*Risk of Quality Issues*" barriers. Beside the mentioned validation, our findings even constitute a refinement of the first work by Quin et al. (2016).

The managerial implications that our research provides are far-reaching. As described, we identified strategies to overcome the barriers SMEs face when adopting crowdsourcing and -working. These insights can be used by SMEs as a blueprint for successfully applying crowdsourcing and -working. SMEs can use these findings to understand and predict the types of barriers they may face when implementing crowdsourcing and -working.

Even more, our empirically identified strategies present clear guidelines on how to implement crowdsourcing and -working in SMEs as well as on how to find tailored solutions to overcome their barriers. Following these strategies makes it possible for SMEs to benefit from efficiency increases, open innovation, and external expert knowledge. Against this background, our research contributes to alleviating SME's fear of the "mystery of crowdsourcing".

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