

ADAPTATION BARRIERS IN INTERNAL CROWDSOURCING: A MULTIPLE CASE STUDY

Research in Progress

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Abstract

Recently, the application of internal crowdsourcing in companies as a new form of orchestrating work has increased substantially. Early research has shown that organizations should apply internal crowdsourcing due to its benefits, such as fast access to internal knowledge and increased productivity. Although studies have identified some advantages, internal crowdsourcing is a complex initiative and we do not sufficiently know how to rollout internal crowdsourcing initiatives in a company and to guide them to a state of stable operations in the adaptation stage. Some papers derived barriers for internal crowdsourcing and solutions on how to overcome them. However, these barriers address mostly the operational stage, when the initiative is already stable. Some papers address adaptation barriers, but the assessment frameworks in current literature used to detect them were incomprehensive resulting in only few adaptation barriers and solutions. Therefore, we identify the adaptation barriers of internal crowdsourcing comprehensively through the technochange theory in a multiple case study, assess what solutions the companies applied and describe how the solutions work in order to display how to overcome barriers in a consolidated introduction model for internal crowdsourcing.

Keywords: Internal Crowdsourcing, Adaptation Barriers, Multiple Case Study

1 Introduction

The use of crowdsourcing as a new form of orchestrating work has increased substantially in recent years since it describes a promising alternative to traditional employment in today's digital era (Kuek et al., 2015). According to Blohm et al. (2013), the fundamental idea of crowdsourcing is that a crowdsourcer (which could be a company) proposes to an undefined group of contributors (individuals, teams or other companies) the voluntary undertaking of a task presented in an open call. A crowdsourcer can apply crowdsourcing externally and internally of its organizational boundaries. Early crowdsourcing initiatives started with an external setting, where contributors include individuals from beyond the company boundaries that participate in some sort of digital freelancing. Companies increasingly use their own employees as an internal crowd of contributors to leverage co-production, collective intelligence and further orchestrate them more efficiently for certain tasks (Zuchowski et al., 2016). In practice, this concept of *internal crowdsourcing* is nowadays used for various activities within business processes, for instance using the crowd for innovation foresight in the market (Rohrbeck et al., 2015).

Early research has shown that organizations should apply internal crowdsourcing due to its benefits (Ågerfalk and Fitzgerald, 2008). Further studies focused on specific benefits of internal crowdsourcing, such as the fast access to internal knowledge (Gaspoz, 2011) and increased productivity (Jette et al., 2015). Although studies have identified some advantages, we do not sufficiently know how to rollout internal crowdsourcing systems in a company and to guide them to a state of stable operations. Cooper and Zmud (1990) define this stage in their IS implementation model as the adaptation stage,

which we will apply, because it covers precisely the roll out until the stable operation. Internal crowdsourcing is a complex system, which includes managing the crowd, providing IT solutions and embedding it internally in the organization, which requires knowledge regarding what challenges occur during the adaptation stage and how to overcome them in order to capture the benefits (Zhao and Zhu, 2014; Zuchowski et al., 2016). Many employees are not specifically familiar with the new mode of work organization called crowdsourcing, i.e., the voluntary participation of contributors following an open call for a task on digital work platforms, which contrasts to the traditional hierarchal mode of instructions by direct supervisors. Due to the differences, internal crowdsourcing ultimately changes the culture of organizations (Zuchowski et al., 2016). This change will go hand in hand with an introduction of new information systems (IS) or different use of IS currently available, because internal crowdsourcing is enabled by IS. Against this background, the adaptation of internal crowdsourcing constitutes a technology-driven organizational change, i.e., technochange (Markus, 2004). As technochange brings together the perspective of IS projects and their organizational challenges (Markus, 2004), we suggest analyzing the barriers of the internal crowdsourcing adaptation stage through the technochange perspective in order to assess the subject comprehensively and to derive solutions to overcome them. Literature understands critical incidents, challenges and risk factors that prevent or complicate the adaptation of IS, like in internal crowdsourcing, as barriers. These barriers originate from communicational, organizational or legal incidents or risk factors (Bannerman, 2008; Lüttgens et al., 2014; Malhotra et al., 2017). The organizational process of removing the barriers is necessary to understand and adapt internal crowdsourcing, which leads to new knowledge and finally to the intended change. Therefore, companies must face the barriers and learn from them by removing the barriers. However, the removing process leading to the new knowledge is not fully understood. Understanding adaptation barriers of internal crowdsourcing and having solutions at disposal to remove them would support an informed decision of organizations concerning choosing internal crowdsourcing as a system for solving a problem or not (Leicht et al., 2016b; Zogaj, 2016) as well as enable companies to take advantage of the benefits (Malhotra et al., 2017).

To the best of our knowledge, research investigating adaptation barriers of internal crowdsourcing is rare, which leaves the following research gap. Malhotra et al. (2017) derived seven barriers for internal crowdsourcing and solutions on how to overcome them. However, these barriers address mostly the operational phase, such as employees not having enough time to participate or hesitating to participate because their boss is part of the crowd. Yet, some papers address adaptation barriers, but the assessment frameworks in current literature used to detect them were incomprehensive. They were not based on comprehensive theories (Erickson et al., 2012), but derived from reviews of crowdsourcing literature only. Therefore, Erickson et al. (2012) identified only a few adaptation barriers for internal crowdsourcing and developed few solutions to overcome them. Due to the limited research on adaptation barriers, unknown adaptation barriers occur and companies have trouble identifying them as well as developing solutions to overcome them in order to capture the benefits of internal crowdsourcing systems. Thus, we follow the encouragement of Zuchowski et al. (2016), Leicht et al. (2016b), Zogaj (2016) as well as Zhao and Zhu (2014) to address comprehensive studies regarding barriers of crowdsourcing, such as the adaptation stage of internal crowdsourcing. The paper in hand does it by identifying the adaptation barriers of internal crowdsourcing comprehensively through the technochange theory in a multiple case study, assess what solutions the companies applied and describe how the solutions work in order to display how to overcome barriers in a consolidated introduction model for internal crowdsourcing. Thus, the intended contribution of the paper in hand is twofold: First, by using the technochange lens, we conceptualize the adaptation of internal crowdsourcing systems as a technochange project and depict how the generative learning process of removing barriers looks like that initiates the organizational change. Second, the paper in hand illustrates what adaptation barriers occur and how to overcome them in order to leverage the internal work force and benefit from the advantages through an introduction model for internal crowdsourcing. Accordingly, the research questions goes as follows:

How to overcome adaptation barriers for internal crowdsourcing in organizations?

This paper proceeds in section two providing the theoretical background by introducing related work. In section three, we outline the applied methodology. Afterwards, we present our preliminary results of the study. Finally, we illustrate the expected contributions after presenting our next steps.

2 Theoretical Background

2.1 Adaptation Barriers in Internal Crowdsourcing

First insights concerning barriers that prevent companies to adapt crowdsourcing are reflected in literature of the external crowdsourcing setting (Leicht et al., 2016b; Lüttgens et al., 2014). External crowdsourcing and internal crowdsourcing may share some similarities but many barriers from external crowdsourcing are not directly applicable to internal crowdsourcing due to differences (Zuchowski et al., 2016). The core difference in internal crowdsourcing is the working relationship between crowdsourcer and contributors, which are determined by employment contracts (Simula and Vuori, 2012). The external crowd includes individuals who are not associated with the crowdsourcer. These external crowd contributors act as self-employed agents since they are not employed by crowdsourcers in a regular employment relationship and can freely choose their working time and location (Durward et al., 2016). Therefore, in contrast to external contributors, the employees of the internal crowd perform crowdsourced tasks within the scope of their daily duties and are not able to choose their own working time and location freely (Bonabeau, 2009; Lopez et al., 2010). Based on this core difference in working relationships, different barriers occur or other strategies to cope with them are applied (Zuchowski et al., 2016). On one hand, the internal crowdsourcer has at times a superior role in its relation to the crowd (Benbya and Van Alstyne, 2010; Denyer et al., 2011; Zuchowski et al., 2016). Therefore, internal crowdsourcing initiatives are implemented preset structures in order to improve communication, collaboration and participation within organizations (Benbya and Van Alstyne, 2010). In addition, the organization as crowdsourcer undertakes the governance of internal crowdsourcing initiatives and thereby directly determine as well as control the processes and crowd contributors (Simula and Ahola, 2014). For instance, the task allocation mechanism is more similar to task assignment than in external settings (Zogaj and Bretschneider, 2014a) since the crowdsourcer uses the existing hierarchies and structures to distribute tasks to certain workers. On the other hand, these differences to external crowdsourcing lead to various motivations of the crowd, which requires different concepts and motivational approaches (Meloche et al., 2009; Simula and Ahola, 2014; Zogaj and Bretschneider, 2014b).

However, research investigating internal adaptation barriers is rare. The assessment frameworks used to detect adaptation barriers were not based on comprehensive theories, but are derived from reviews of crowdsourcing literature only. Erickson et al. (2012) derived the theoretical basis of their model from the crowdsourcing literature, such as the “crowd” (Di Gangi and Wasko, 2009; Stewart et al., 2009), “crowdsourcing benefits” (Anthes, 2010; Poetz and Schreier, 2012) or “negative impacts” (Bonabeau, 2009; Jouret, 2009). They published their article identifying only two generic barriers for adapting internal crowdsourcing, organizational perceptions of value and organizational practice. They argue that there is a need for changing the perception of the crowdsourcing value in organizations in order to receive acceptance and use of internal crowdsourcing. In addition, they point out that the executive leadership would need to generate awareness and create incentives proactively in order to generate participation of the internal crowd. Furthermore, Zuchowski et al. (2016) shed light on the potential reluctance of key employees, due to the need of adapting to the new mode of work through internal crowdsourcing. Therefore, management of corporate culture and change seems to be an important aspect for adapting internal crowdsourcing (Zuchowski et al., 2016). Finally, Malhotra et al. (2017) identified a list of seven barriers for internal crowdsourcing. These barriers address participation and collaboration in operations already stable and only partly the adaptation stage before. Therefore, research identified only a few adaptation barriers for internal crowdsourcing, other important adaptation barriers remain unexamined, preventing companies of learning from the removing process, which is necessary to take advantage of the benefits of internal crowdsourcing.

2.2 Internal Crowdsourcing as Socio-Technical System

The adaptation barriers occur in a complex system, as Geiger and Schader (2014) pointed out that internal crowdsourcing is a socio-technical system. According to the Socio-Technical System theory (STS), such a system consists of five basic components (i.e., *actors*, *tasks*, *structure*, *technology*, and *environment*) (Beese et al., 2015; Lyytinen and Newman, 2008). In the context of internal crowdsourcing, the crowd represents *actors* that conduct a *task* in the system according to a *structured* workflow (Zhu et al., 2014). Furthermore, internal crowdsourcing is a *technology*-enabled phenomenon using both generic social media (e.g., wikis, blogs) (Stocker et al., 2012) and dedicated specialist tools (Rohrbeck et al., 2015). Lyytinen and Newman (2008) argue that the components *actors*, *tasks*, *structure*, and *technology* are interconnected and embedded in the organizational *environment* that is driving and influencing change (Beese et al., 2015), as internal crowdsourcing takes place in companies (Simula and Vuori, 2012). As STS is probably the most extensive body of conceptual and empirical literature to analyze systems that involve a complex interaction between components of socio-technical systems (Baxter and Sommerville, 2011), STS is a comprehensive lens that will help us to structure the barriers in the complex socio-technical system and its components.

2.3 Technochange

Technochange is a technology-driven organizational change, which lies on organizational performance through a socio-technical system (Markus, 2004). Against this background, Markus (2004) developed the technochange management perspective that integrates the technological and the change management perspective in IT projects. Therefore, technochange projects have a broad range of effects, for instance on the relations between risk, benefit, behaviours, results, planning, management competences, operational issues and resources (Fearon et al., 2013; Harison and Boonstra, 2009; Markus et al., 2000; Rerup Schlichter and Kraemmergaard, 2010). Markus (2004) defines technochange as technology-driven organizational change, which lies on organizational performance through a socio-technical system. In this socio-technical perspective, technochange addresses user acceptance, employee satisfaction, process design and organizational performance (Fearon et al., 2013; Jackson and Philip, 2005; Seng et al., 2010). Markus (2004) argues that triggering major organizational changes creates high-risk due to the complexity involved, therefore focusing on only either the technological or the change management perspective would potentially lead to misalignment between the IT solution and the organizational culture, missing the potential of IT-solutions and organizational change. Technochange creates an emergent environment in organizations, which improves iteratively the technology and organization (Jackson and Philip, 2010). The iterations are reflected in the process perspective that consists of four phases (Markus, 2004): (1) *Chartering phase*: The technochange idea is proposed, approved and funded. (2) *Project phase*: The project develops the technochange solution and buys or builds the technology. The phase ends, when the solution goes live. (3) *Shakedown phase*: The organization starts to operate according to the technochange idea and solution. The goal is to overcome the operational issues and to reach “stable operations”. (4) *Benefit Capture*: The organization systematically captures the benefits of the technochange solution.

In the STS perspective, the four phases of the technochange process affect and therefore are linked to the STS components (Li and Peters, 2016; Markus, 2004). Consequently, we combine the current internal crowdsourcing literature with the two comprehensive concepts from theory, the technochange perspective and STS in order to sharpen the lens of our assessment framework. On one hand, technochange supports the understanding of the process to remove barriers, which is necessary in order to identify adaptation barriers comprehensively and are reflected in the project and shakedown phase. It guides the focus of our investigation to the aspects of our technochange project most affected by barriers. On the other hand, we validate the comprehensiveness of the identified adaptation barriers according to the five socio-technical components of internal crowdsourcing by structuring them in each technochange phase according to the five socio-technical components of STS and derive measures to overcome them. We will assess what solutions the companies applied, what they learned during the pro-

cess, how they work and consolidate our outcome in an introduction model for internal crowdsourcing, which will match barriers with best practices solutions to overcome them.

3 Method

3.1 Multiple Case Study Research

In order to address our research question, we apply a multiple case study research design. We investigate three cases of companies adapting internal crowdsourcing. The method is adequate, because the study assesses a contemporary phenomenon in a real-life context, whose boundaries between phenomenon and its context are not evident. This makes a case study suitable for studying complex social phenomena, such as internal crowdsourcing (Eisenhardt, 1989; Maxwell, 2008; Yin, 1994). In addition, a multiple case study allows us to retain the holistic and meaningful characteristics of our unit analysis, i.e., companies adapting internal crowdsourcing (Yin, 2003). The paper in hand includes three cases to collect an adequate amount of data that ensures the robustness as well as increase the generalizability of the research outcome (Pare, 2004; Yin, 2013), which are illustrated in table 1.

Case	Description
A-Bank	In case A, we investigate adaptation barriers for internal crowdsourcing in the context of a Swiss bank. The company has a long tradition in integrating its internal end users (i.e., employees from the single bank branches) in the testing efforts of its enterprise applications by inviting them to the headquarter. In 2016, the bank decided to integrate employees into a testing process more efficiently by using the crowdsourcing principle. Characteristics: (A) Internal crowd as part of the standard testing process of the IT department, (B) High IP level regarding the data, (C) Large and formal IT department
B-Insurance	In case B, we examine the barriers from a Swiss insurance company. The insurance company had first experience in a pilot project regarding crowdtesting. Then, the company decided to build a new internal crowd for ad-hoc projects. The company is currently conceptualizing the internal crowdtesting system. Characteristics: (A) Internal crowd as an ad hoc team for the IT department, (B) Middle IP level regarding the data, (C) Large / formal IT department
C-Industry	In case C, we explore the barriers of an industrial enterprise in Slovakia, which is a part of a company from Germany with a global network. This enterprise in Slovakia had also first experience in a pilot project regarding crowdtesting and decided afterwards to invest in an internal crowdtesting system. The crowdtesting system will be a part of a standard testing process of the IT department. Characteristics: (A) Internal crowd as part of the standard testing process of the IT department, (B) Low IP level regarding the data, (C) Small / informal IT department

Table 1. Description of the three cases

We chose cases that show and reflect circumstances of everyday business conditions. On one hand, the study selected the cases according to the following criteria to ensure comparability: (1) The companies are using internal crowdsourcing in similar projects, in our cases crowdtesting. Crowdtesting refers to a company proposing software testing tasks to the crowd (Leicht et al., 2017). This type of crowdsourcing is suitable for our research goals, because it is a complex task that reoccurs and requires a dedicated IT enabled process. In this regard it qualifies for a technochange project (Leicht et al., 2016a; Zogaj et al., 2014). (2) The internal crowdtesting efforts are all in-house and are conducted with an internal crowd of employees (3) as well as managed by the internal IT department or other internal personal. On the other hand, three cases provide the possibility of covering divers frame conditions and case characteristics for adapting internal crowdsourcing. First, the diversity of purpose, two adapt internal crowdsourcing as part of a standard process and one case uses internal crowdsourcing flexibly for ad-hoc projects. Second, divers sectors, the first company is active in the banking sector, the second is selling insurances and the final company produces goods, which reflects a different level of IP regarding data. Third, the companies display varying importance, size and know-how of the

companies IT. Accordingly, the IT department and their governance structures differ, therefore may affect their ability to conduct the adaptation process of internal crowdsourcing.

3.2 Data Collection

Cases draw information from diverse arrays of multiple data sources (Creswell, 1998; Meredith, 1998). The data sources for the full paper will include semi-structures, in-depth interviews, observations of the project management, such as accompanying them in different meetings and workshops. Additional sources will be project documentation, like monthly status updates, project concepts, communication transcripts of crowdtests and access to the internal crowdsourcing platform. In each case, we will conduct at least six interviews with duration of about 40-60 minutes. The six interviews will include diverse positions, two project management officers (PMO), two test managers and two contributors of the crowd, because the different perspectives of the positions will help to identify the barriers and to understand how the solutions to overcome them work. Some barriers may occur later in the adaptation phase some earlier. Hence, the interviews will be conducted at the end of the adaptation phase in order to assess the comprehensive set of barriers and solutions that occurred. The paper in hand is a research in progress and gathered information from case (A) since September 2016, which includes comprehensive project documentation, as described above, as well as observations of the project management and semi-structured, in-depth Interviews. The interviews were conducted with two contributors and two test managers with a duration of 40-60 minutes per interview. All interviews were recorded and transcribed. In the future, we will collect similar information in the other cases and draw comparisons. The data sources are illustrated in the table 2. For data analysis of the interviews we will use the systematic approach of Gioia et al. (2013), which suggest analyzing qualitative data in several cycles of category based coding in order to look for themes, explaining the phenomenon observed. In addition, we will triangulate the interview data with the observations, project documentation and information from the platform data in order to assess if there is information to contradict, to confirm or to extend the outcome of the interviews. Finally, we will conduct a cross case analysis between all three cases and investigate differences and similarities between them regarding barriers and solutions according to the case characteristics.

(1) Interviews	
<i>Interviewee(s)</i>	<i>Content/Subject</i>
PMO (Each Case:2)	<ul style="list-style-type: none"> • Inquiry of adaptation barriers according to the project and shakedown phase of technochange and the STS components • Inquiry according to the barriers found with regard to what solution the company applied and how it worked
Test Manager (Each Case:2)	
Contributor (Each Case:2)	
(2) Observations	<ul style="list-style-type: none"> • Project meetings and workshops, observations of the crowd
(3) Project Documentation	<ul style="list-style-type: none"> • Monthly status updates, project concepts, presentations
(4) Platform Data	<ul style="list-style-type: none"> • Communication transcripts of crowdtests, KPI's of the crowdtests

Table 2. Data sources.

4 Preliminary Results

The first case (A) provides an excellent environment for investigating adaptation barriers of internal crowdsourcing. The company of the first case managed to integrate 215 employees as a crowd into the crowdtesting system in the context of the testing efforts of the IT department. For this achievement, the project management team had to troubleshoot eleven adaptation barriers of internal crowdtesting. Our findings so far are summarized in table 3:

Adaptation Barriers	Description
Actors	
<i>Expectation - Project Phase</i>	In case A, the company had to meet and manage the expectation of the crowd. First, the maturity of the test object in the crowdtesting project was too low for some testers. They expected a tool with fewer issues and were surprised of the amount of issues they found. Second, the company had to manage the expectation of some contributors regarding the possibilities of changing the software according to their preferences of the crowd. Not everything the contributors wanted to change could be changed due to limits given by standardized software products. Not managing the expectation would decrease the acceptance of the contributors regarding the software, which they should use later in daily business.
<i>IT competences - Shakedown</i>	In technochange, inadequate training is a common adaptation barrier. In case A, the company faced the challenge of a high diversity of IT competences by the individual contributors of the crowd, due to their origin being from non-IT related areas. On one hand, some contributors did not possess the competences for basic IT-tools. On the other, some contributors brought high IT competences, mastering the IT-tools for the internal crowdsourcing system quickly. If the training did not lift the contributors to a minimum level of IT competences, the initiative could produce contributors not being able to conduct their tasks.
<i>Motivation - Shakedown</i>	Technochange identifies backlash from partners as an adaptation barrier. In case A, the back-lashing partners were the crowd, expressing their decreasing motivation. The decreasing motivation was related to a range of reasons, for instance to the need of feedback regarding their contribution. The contributors wanted to know what happened to it and why some were not addressed in the following initiative. Not addressing the decreasing motivation of the crowd would result in a shrinking crowd, reducing its capacity.
Technology	
<i>Limitation of Tools - Project Phase</i>	The company had the challenge of a limited supply of IT tools. The higher management decided not to buy new tools that were developed for the specific context of internal crowdtesting system. The solution were to be built with tools already available and in use by the company, which led to inefficient workarounds.
<i>Technology Performance - Shakedown</i>	The initiatives were interrupted by the performance of the internal crowdtesting system. The loading time of certain activities of the contributors took up to several minutes, interrupting the initiative. In this period, the contributors could conduct the tasks only very slowly, which reduced their effectivity.
Contribution	
<i>Missing Instructions - Shakedown</i>	Missing instructions resulted in the challenge of receiving 30-50% of contributions without value. The test management had the challenge of evaluating a high amount of crowd contributions and identifying the valuable contributions between the useless ones. This lead to an inefficient evaluation process.
<i>Incomprehensive Instructions - Shakedown</i>	Some instructions of the initiative were created automatically. Consequently, the instructions were not aligned with the needs of a crowd. On one hand, the crowd did not understand the IT specific vocabulary, because most of them did not originate from IT related jobs. On the other hand, the instructions were not updated according to the development of the project. They were created at the beginning and not adapted to the development of the project later on. Consequently, the steps in the instructions did not match the actual project anymore. Therefore, the contributors needed more time to conduct the initiatives, which reduced the amount of tasks they could finish, decreasing their efficiency.
Structure	
<i>Initiative Style - Shakedown</i>	The higher management decided to use the crowd for reoccurring initiatives only. The lack of variety in the initiatives decreased the value of the crowd contribution, because it could not use the potential benefits of an internal crowd, which are more effective in diversified initiatives, where the crowd finds unexpected contributions. The crowd usually consists of experts adding new knowledge and perspective, which does not exist in the traditional teams of employees. Using a crowd in a reoccurring initiative loses the benefit of new knowledge and perspective. Consequently, the crowd contributed results with lower quality.

<i>Ineffective Segmentation - Shakedown</i>	Some contributors were selected to conduct tasks, which were outside of their expertise. This mismatching of task and expertise decreased the quality of the results handed in by the crowd.
Environment	
<i>System Interfaces - Project Phase</i>	The technochange project faced the challenge of inefficient interfaces between the internal crowdtesting system and the IT department. The test management had to transfer information initiatives, such as instructions, from the IT department to the internal crowdtesting system manually. The inefficient interface occupied the management up to an hour per initiative, increasing their time investment.
<i>Management Support - Shakedown</i>	High management did not support a setting, in which the internal crowdtesting project could take advantage of the potential of internal crowdtesting. Consequently, the high management perceived the internal crowdtesting system as less effective than expected, leading to lower support and resources.

Table 3. The adaptation barriers, which occurred on the first case (A).

5 Expected Contribution and Future Work

Given the lack of research regarding adaptation barriers of internal crowdsourcing, our first objective is to identify adaptation barriers (Leicht et al., 2016b; Zuchowski et al., 2016). Hitherto, we have found an initial set of adaptation barriers, broadening the understanding in our first case. Compared to existing literature (Erickson et al., 2012) we applied the technochange perspective in order to investigate comprehensively and structured the results according to the socio-technical components of internal crowdsourcing. We identified eleven adaptation barriers affecting all socio-technical components. In the next steps, we will investigate adaptation barriers in the context of the other two cases. The data collection will include internal documents, observations and interviews. As in the first case, we will apply the comprehensive technochange lens for identifying adaptation barriers and structure them according to the socio-technical components. Further, we will investigate the measures of the companies in the two cases for overcoming the challenges imposed by the adaptation barriers. Finally, we will carry out a comparative examination between the three cases in order to understand the learning process of removing barriers, explain differences and similarities that drive the intended change in the organization. For instance, how the specific context and different characteristics of the cases (see table 1) influence the appearance and removal of the barriers. The results will be consolidated in an introduction model that illustrates what measure a company should apply, given a certain context and adaptation barrier. In this perspective, the paper in hand addresses practitioners as well as the IS research community. It will contribute to the research area of crowdsourcing by showing what kind of adaptation barriers exist in technochange projects, such as internal crowdtesting systems. In addition, we will investigate and explain how companies can overcome these barriers and reach a stable operation. This theoretical contribution is a type of explaining by expanding the scientific body of knowledge with empirical results of several case studies, which will support the management of crowdtesting initiatives. The case study research approach supports the process of forming a rigor management approach, identifying adaptation barriers and overcoming them, since companies are currently struggling in adapting internal crowdtesting initiatives and have room for improvement (Gregor, 2006). Practitioners will have an increased understanding of adaptation barriers in internal crowdtesting. Consequently, they will have an introduction model at disposal, which will enable them to overcome them and take advantage of the benefits. Finally, the outcome of the full paper will support an informed decision of choosing internal crowdtesting systems as a form of solving a problem or not (Malhotra et al., 2017; Zogaj, 2016).

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