ANALYZING GOVERNANCE MECHANISMS FOR CROWDSOURCING INFORMATION SYSTEMS: A MULTIPLE CASE ANALYSIS

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Abstract

Crowdsourcing has gained much attention in practice over the last years. Numerous companies have drawn on this concept for performing different tasks and value creation activities. Nevertheless, despite its popularity, there is still comparatively little well-founded knowledge on crowdsourcing, particularly with regard to the governance of crowdsourcing initiatives. Although proper governance is considered as the key to success by several researchers, little is known about governance mechanisms and their use in crowdsourcing initiatives. We address this issue by conducting a multiple case analysis in the scope of which we examine the governance mechanisms implemented in three different crowdsourcing information systems (i.e., crowd rating, crowd processing and crowd solving). For each system, we outline what kinds of governance mechanisms are used and how these are implemented. An initial comparison shows that relatively more mechanisms are used in crowd solving systems compared to crowd rating as well as crowd processing systems.

Keywords: crowdsourcing, crowdsourcing intermediary, control and governance mechanisms, case study.

1   Introduction

New information technologies, particularly the Internet as an immersive and multimedia-rich technology enable companies to reach out to the masses (Vukovic, 2009), and open tasks and functions "once performed by employees and outsourcing [these] to an undefined (…) network of people in the form of an open call" (Howe, 2006b). This form of sourcing is referred to as 'crowdsourcing' and was first coined in 2006 by Jeff Howe in the Wired magazine (Howe, 2006b). Due to the pervasiveness of the Internet and its nearly ubiquitous presence in the recent past, crowdsourcing has gained great popularity, and numerous companies have used this concept for performing different tasks and value creation activities (Blohm et al., 2013; Leimeister et al., 2009).

Despite its popularity, there is still comparatively little well-founded knowledge on crowdsourcing. Emerging articles about preliminary taxonomies, typologies and categorizations of crowdsourcing

(Brabham, 2012; Geiger et al., 2012; Rouse, 2010; Yuen et al., 2011), about basic characteristics of crowdsourcing initiatives (Schenk and Guittard, 2011; Vukovic and Bartolini, 2008) or about the definition of crowdsourcing (Estellés-Arolas and González-Ladrón-de-Guevara, 2012; Oliveira et al., 2010) highlight the novelty-character of this concept. However, current research lacks insights, particularly with respect to the governance of crowdsourcing initiatives (Jain, 2010; Pedersen et al., 2013). According to Pedersen et al. (2013) who report on a literature review on crowdsourcing in the Information Systems field, "minimal research [has been conducted] related to governance, but proper governance was offered as the key to success by several researchers."

Boudreau and Lakhani (2013), Jain (2010), and Spiegeler et al. (2011), amongst others, indicate as well that *governance* is a crucial challenge within crowdsourcing. Irrespective of different successful examples, research shows that an uncontrolled crowd may either not reach the desired outcomes or generate unfavorable results (Chanal and Caron-Fasan, 2010; Howe, 2010). In this context, Simula (2013) exemplarily refers to CrowdSpirit and Cambrian House as two crowdsourcing intermediaries that have experienced great problems in actuating their crowds to generate appropriate solutions. Meanwhile, Downs et al. (2010) as well as Eickhoff and de Vries (2011) report on crowd members who submit random or erroneous results on different crowdsourcing platforms (e.g., on Amazon Mechanical Turk), thereby endangering the success of the respective crowdsourcing initiatives.

These examples stress the importance of governance within crowdsourcing and, accordingly, of mechanisms that are required to effectively govern the crowd and its activities. Especially crowdsourcing platform operators (be it crowdsourcing intermediaries or companies that self-operate a crowdsourcing platform) are eager to know how they steer the crowd towards the desired outcomes. With regard to the sparse research on governance, however, questions arise as what kind of *governance mechanisms* exist and how these are arranged and implemented. Moreover, "research is needed to show which governance mechanisms are most effective, and which are most effective by problem type" Pedersen et al. (2013).

In view of this, the aim of this paper is to address these issues by analyzing different crowdsourcing initiatives in practice. However, various articles – as well as the previously mentioned examples – highlight the diverse nature of crowdsourcing (Afuah and Tucci, 2012; Geiger et al., 2012; Schenk and Guittard, 2011; Vukovic, 2009). For instance, crowdsourcing initiatives on Amazon's Mechanical Turk (crowdsourcing for small tasks – i.e., microtasks) are different from crowdsourcing initiatives on InnoCentive, where crowd members elaborate solutions on complex research problems. Therefore, a differentiated analysis is required when approaching governance within crowdsourcing. In this context, we build on Geiger et al.'s (2012) typology who present *four types of crowdsourcing information systems* – i.e., crowd rating, crowd creation, crowd processing and crowd solving. We examine each type by conducting in-depth case studies and thereby seek to fill the outlined research gaps by addressing the following research question:

RQ1:   What kind of governance mechanisms are used within the four different types of crowdsourcing information systems and how are they implemented?

RQ2:   How are the identified governance mechanisms implemented in each different type of crowdsourcing initiative?

Hence, we not only intend to identify governance mechanisms that are used in the different types of crowdsourcing systems (descriptive approach) but also to examine *how* the mechanisms are applied (explorative approach). Therefore, we proceed as follows: In section two, we first provide the terminological and theoretical background by briefly approaching the concept of crowdsourcing as well as outlining the different types of crowdsourcing information systems. Within this section, we also present related work in order to utilize previously generated insights for the subsequent case studies. In section three, we provide a summary of the methodology used for this research before we outline the different cases that we approach. Next, we present our preliminary analysis and the hereby

obtained results before we conclude by outlining the expected contributions of our analysis and providing an outlook on the next steps.

2   Conceptual Background

2.1   Crowdsourcing Information Systems

Crowdsourcing describes a new form of outsourcing tasks, or more accurately, value creation activities and functions. The term itself is a neologism that combines crowd and outsourcing (Rouse, 2010), originated by Jeff Howe, who defines crowdsourcing 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, 2010). In a crowdsourcing model, at least two types of actors are engaged: the initiating organization that crowdsources specific tasks and the individuals from the crowd who perform these tasks. The first entity we denote as *crowdsourcer* ["system owner" (Doan et al., 2011); "designated agent" (Howe, 2006a)]. The latter, the undefined contractors from the crowd, we label as *crowdsourcees*. In some cases, the crowdsourcer establishes and hosts a crowdsourcing platform within the organization (internal crowdsourcing platform). However, in most crowdsourcing initiatives, there is also a third type of agent: the *crowdsourcing intermediary*. Crowdsourcing intermediaries, as the name suggests, mediate between the crowsourcer and the crowdsourcees by providing a platform where these parties are able to interact (Zogaj et al., 2014).

Crowdsourcing is enjoying increasing popularity in various domains such as IT, art, health care, electronic consuming, finance, and many others, and it is used for different kinds of tasks (idea generation, evaluations tasks, design tasks, etc.) (Fähling et al., 2013; Leimeister, 2010, 2012). Consequently, various researchers (Penin and Burger-Helmchen, 2011; Schenk and Guittard, 2011; Vukovic, 2009; Whitla, 2009; Zhao and Zhu, 2012) have analyzed the application of crowdsourcing for different purposes and situations, and suggest different alternatives for categorizing crowdsourcing initiatives. A recent typology that considers crowdsourcing initiatives, especially through the lens of IS research, is provided by Geiger et al. (2012). In their paper, Geiger et al. (2012) refer to the work system approach, which defines an information system as "a system in which human participants and/or machines perform work (processes and activities) using information, technology, and other resources to produce informational products and/or services for internal or external customers" (Alter, 2008). Building on this definition, the authors introduce "*crowdsourcing information systems* as a special case of information systems that produce informational products and/or services for internal or external customers by harnessing the potential of crowds" (Geiger et al., 2012). The typology covers two basic dimensions: the *types of contributions* and the *hereby derived value*.

According to Geiger et al. (2012), contributions from crowdsourcees can either be *homogeneous* (i.e., they are seen as qualitatively identical) or *heterogeneous* (i.e., they are different in nature and quality). Meanwhile, the value that is derived from the contributions can be *emergent* (i.e., value is derived only from the entirety of all contributions and the relationships between them) or *non-emergent* (i.e., an individual contribution delivers a fixed value, which is independent of other contributions). Based on these characteristics, Geiger et al. (2012) present four types of crowdsourcing information systems: crowd rating, crowd processing, crowd creation, crowd processing, and crowd solving. In *crowd rating systems*, crowdsourcees' contributions are homogeneous, whereas the collective value emerges only from the totality of all contributions (examples: Amazon's product review system)(Riedl et al., 2013). In *crowd processing systems*, crowdsourcees' contributions are homogeneous as well; here, however, each contribution can be utilized independently from others (examples: Amazon's Mechanical Turk or Bitworxx.com; Geiger et al., 2012; Hirth et al., 2011). In contrast to these two types of crowdsourcing information systems, crowdsourcees' contributions within crowd creation and

crowd solving are heterogeneous and thus differ in scope, focus, quality and content. Within *crowd creation systems*, crowdsourcees collaborate with each other and elaborate one joint solution to a specific problem (examples: ideas communities such as Quirky, SAPiens by SAP or Nokia's IdeasProject community). Contrastingly, in *crowd solving systems*, contributions are independent of each other and represent alternative or complementary solutions to a given task or problem (prominent examples of such systems are 12designer.com or utest.com; Geiger et al., 2012).

In our opinion, the presented typology encompasses and covers various types of crowdsourcing initiatives available in practice and, hence, serves as a suitable basis for our analysis. When analyzing different aspects of the crowdsourcing phenomenon (e.g., processes, behavior of crowdsourcees or – in our case – governance mechanisms) it is necessary to differentiate between different crowdsourcing initiatives and outline the type of initiative to which the research results refer. This is because it is questionable if insights obtained with respect to one type can also be transferred to other types of crowdsourcing initiatives. In our analysis, we thus approach each presented type separately and compare the obtained results; however, we first outline related work on governance and governance mechanisms.

2.2   Related Work on Governance in Online Settings

For more than a decade, researchers have analyzed various kinds of Internet-based communities and networks in order to understand the herein prevailing processes and, consequently, to establish measures and mechanisms to control and regulate user behaviors (Preece, 2004; Ridings et al., 2006; Smith and Kollock, 1999). In this context, scholars have especially laid emphasis on *governance* issues within different kinds of online communities, e.g., open innovation or open source communities (e.g., Bowles and Gintis, 2002; Markus, 2007; O'Mahony and Ferraro, 2007). According to Forte et al. (2009), governance generally refers to a system for organizing the rules and processes that regulate people's behavior in a particular setting. Applying this to online community setting, it, inter alia, refers to structures of roles and responsibilities, formal and informal rules, outcome control measures, IT-enabled communications processes, as well as task allocation within a specific online community (Markus, 2007; Sagers et al., 2004; Shah, 2006; Vincent and Camp, 2004). For our work, we build on the definition by Markus (2007) for OSS governance (Open Source Software; e.g., Linux operating system, Firefox web browser), and think of governance in crowdsourcing as *a means of achieving the direction, control and coordination of wholly or partially autonomous individuals on behalf of a crowdsourcing initiative to which they (jointly) contribute*. Meanwhile, governance is carried out by means of different mechanisms, so-called governance mechanisms (Dahlander et al., 2008). Generally, governance mechanisms relate to relational norms and agreements, control-enhancing structures, decision-processes, procedures and evaluation systems, organizational structures and reward systems (Argote and Kane, 2009; He et al., 2009; Pascucci et al., 2013).

A thorough review of existing literature on crowdsourcing reveals that, except from Jain's (2010) work, no article explicitly addresses or analyzes governance, respectively, governance mechanisms (Pedersen et al., 2013). In her research-in-progress, Jain (2010) first outlines governance mechanisms identified in OSS literature. Accordingly, we also take into account these insights and subsequently briefly presenting and describing the central governance mechanisms found in these settings: *Monitoring and sanctioning* of user behavior has been found to be an important mechanism when it comes to encouraging community members to hold to common standards and regulations (Markus et al., 2000; Xu et al., 2005). In Open Source projects, for instance, "voting a member out" and "reducing a member's privileges" are ways of sanctioning misbehavior (Gallivan, 2001). *Coordination mechanisms* – such as "shared protocols" by means of which members report and document their achievements – are also often used in OSS projects to align and control work processes (Bonaccorsi and Rossi, 2003). Meanwhile, *membership management* is, according to Sharma et al. (2002) as well as Markus et al. (2000), a viable mechanism for establishing a community that consists of qualified

members. Apart from these mechanisms, *reputation* (e.g., a desire to maintain a good reputation among peers), *decision making* (e.g., property rights and decision-making rights) and *rules and institution* (e.g., rules of conduct) are seen as relevant governance mechanisms (Jain, 2010; Markus et al., 2000; Shah, 2006).

Against this backdrop, Jain (2010) analyzes governance mechanisms in three crowdsourcing projects (crowd creation projects according to the previously shown typology) and identifies 'outcome control,' 'effective incentive mechanisms,' 'effective task decomposition' and 'process transparency,' among others, as governance mechanisms established within the Netflix crowdsourcing project. 'Effective task decomposition' and 'process transparency' are implemented in the crowdsourcing project initiated by UK's Department for Work and Pensions as well, in addition to 'membership management' and 'framework overview.' As opposed to this, within the crowd collaborative wikinovel-writing project, no outcome control, no framework overview, no task decomposition and no coordination mechanisms were found. Jain's (2010) study provides a promising first approach for analyzing governance mechanisms in crowdsourcing projects. However, Jain's (2010) work encompasses only *crowd creation* initiatives if we consider the analysis against the backdrop of Geiger et al.'s (2012) typology. In all three cases, the participating crowdsourcees collaborated and elaborated a joint solution. In this study, we go a step further and analyze governance mechanisms within all types of crowdsourcing initiatives in order to provide a comprehensive picture of governance mechanisms used within crowdsourcing. This means that we close the gap by analyzing governance mechanisms in crowd rating, crowd processing as well as crowd solving initiatives. Due to the fact that Jain's work is a research-in-progress, we plan to also include crowd creation initiatives so that our results can be compared to the results provided by Jain (2010). Our study will yield whether, and if so, what kind of *further* governance mechanisms are implemented in all types of crowdsourcing initiatives. Before we present our preliminary results, we present our research methodology and the cases that we analyzed.

3 Methodology and Case Selection

Studying governance mechanisms in crowdsourcing initiatives from an initiator's perspective, as well as the challenges associated with it, demands qualitative research on the organizational level. The case study methodology is particularly useful for exploring new phenomena, such as crowdsourcing governance (Bittner and Leimeister, 2011; Darke et al., 1998). Multiple case studies can often shed useful light on, and provide a deeper understanding of, important issues when the available data are limited, since they allow observing, exploring and explaining new phenomena within their real-life setting (Steinfield et al., 2011; Yin, 2003). Crowdsourcing governance exhibits the above-mentioned features. Therefore, we suggest the case study approach to be suitable for investigating governance mechanisms for crowdsourcing information systems. For our study, we decided to analyze *two cases for each type* of crowdsourcing information system. Hitherto, we have analyzed crowd rating systems, crowd processing systems and crowd solving systems (two cases for each type) – thus, two cases for crowd creation have yet not been analyzed. For the three analyzed categories, we approached the following crowdsourcing intermediaries that operate a platform in one of the specific fields (Table 1).

Type	Description of Intermediary
Crowd Rating	(1) *Cash4Feedback* (cash4feedback.de) is a crowdsourcing intermediary where crowd-sourcees receive money predominantly for rating various products (e.g., books) or services.
	(2) At *VotingBooks* (votingbooks.com), crowdsourees upload self-made pictures and rate (from 1-10) pictures from other crowdsourcees. The top 100 are then published in a book.
Crowd Processing	(1) *Bitworxx* (bitworxx.com) is a crowdsourcing intermediary for micro tasks. Bitworkers (i.e., crowdsourcees) process tasks such as text translation, writing product descriptions or

	gathering and categorizing data.
	(2) *Clickworker* (clickworker.com) is a crowdsourcing intermediary for different supporting business tasks. The company breaks business projects into smaller tasks (e.g., language translation, data categorization) and distributes them to the crowdsourcees.
Crowd Solving	(1) *testCloud* (testcloud.com) offers software testing services for companies that crowd-source their testing activities. Here, crowdsourcees validate specific software applications.
	(2) *Innovationskraftwerk* (innovationskraftwerk.de) (English: "innovation powerhouse") is a crowdsourcing intermediary specialized for new product/ innovation development.

Table 1.   Analyzed Cases

According to Meredith (1998), a case study-analysis "typically uses multiple methods and tools for data collection from a number of entities by a direct observer(s) in a single, natural setting that considers temporal and contextual aspects of the contemporary phenomenon under study, but without experimental controls or manipulations" (Meredith, 1998). Data sources for our study include semi-structured, in-depth (personal) interviews conducted with the founders or CIO's of the presented crowdsourcing intermediaries from 2012 to early 2013. Each interview lasted at least 45 minutes; however, we also conducted several shorter interviews with some of the informants over the telephone in order to gain further information on various issues that arose during our analysis. All interviews were recorded and subsequently transcribed. In each situation, detailed notes were taken during interviews. In addition to the interviews, we reviewed several documents provided by the interviewees such as internal data and reports (e.g., workflow design, data on the composition of the crowd). Data available on the Internet (e.g., articles available on the different intermediaries; also information available on various crowdsourcing information platforms such as 'crowdsourcing.org' or the German Crowdsourcing Association 'crowdsourcingverband.de') was also considered and analyzed. Eventually, we were also granted access to some of the platforms. This included insight into the user-interfaces of crowdsourcers as well as of crowdsourcees. Based on this data set, we analyzed how the crowdsourcing intermediaries govern different crowdsourcing projects.

4   Preliminary Findings

The selected cases provide an excellent context for exploring governance mechanisms for crowdsourcing information systems for a number of reasons: First, all of the listed crowdsourcing intermediaries managed to implement more than two dozen crowdsourcing projects and generate a relatively large crowd within just a short period of time (mostly within a few years). For this to work, normally, internal governance structures and corresponding mechanisms must be well-coordinated. This naturally leads to the question as how these mechanisms are implemented. Our findings so far are summarized in Table 2.

Governance Mechanisms	Description
Crowd Rating:	
Effective rating mechanism	Implementing an effective rating mechanism that sufficiently catches crowdsourcees' perceptions and opinions is the central issue within crowd rating systems. Therefore, *uni-dimensional scales* (e.g., rating from 1 to 10) are used in combination with other *feedback mechanisms* (e.g., text fields where crowdsourcees are able to make additional comments)
Effective incentive mechanism	In crowd rating systems, incentives that address intrinsic motives are increasingly used. Users (i.e., crowdsourcees) have the desire to express their opinions and views and do so, predominantly, without compensation. However, *monetary compensation* is used as a *supporting incentive* (e.g., at Chash4Feedback, crowdsourcees receive micro-payments).

Task definition	Crowd ratings tasks, as such, are simple and not very laborious. However, the analysis shows that the *valuation object* is to be *precisely defined*. E.g., it has to be defined whether a product as a whole is to be valuated or only some aspects of the given product.
Quality assurance mechanism	In crowd rating systems, the challenge lies in *preventing arbitrary valuations* by crowdsourcees who try to 'game the system' (e.g., submit random results just for the sake of money). In this context, intermediaries *perpetually sample check* ratings and written feedback of crowdsourcees (e.g., check whether the feedback is always identical).
Crowd Processing:	
Effective incentive mechanism	In crowd processing systems, monetary compensation is the predominant incentive. Here, the *transparency of remuneration* (i.e., a clear definition of 'how much money is paid for which contribution') plays a crucial role. For the intermediary, it is further important to *exactly align the remuneration* with the *effort* that is needed to complete a task. Therefore, tasks should be performed by the crowdsourcer before broadcasting. Although this is trivial, we found that crowdsourcees can get discouraged if the effort is not appropriately remunerated.
Effective task break-down & integration	Crowd processing systems require the crowdsourcer/intermediary to *divide the tasks into discrete subtasks* with clearly defined outputs. Each subtask is tailored in such a way that it can be performed by one worker. In the analyzed cases, *task decomposition* and the *re-integration* are accomplished by the crowdsourcer in collaboration with the intermediary.
Quality assurance mechanism	Due to the fact that tasks are largely homogeneous in crowd processing systems, quality assurance can partly be automated. We found three options: (1) *peer-assessment*: the system invites crowdsourcees to rate and approve other crowdsourcees' submissions; (2) the system *mixes real tasks with fake tasks* for which the correct outcome is already know and counterchecks sample-wise; (3) multiple crowdsourcees *are assigned identical tasks* and only results that are *replicated* will be rewarded. Alternatively (not automated option), the intermediaries offer their customers (i.e., crowdsourcers) the possibility to *install pre-tests* which help in identifying the most promising crowdsourcees.
Crowd Solving:	
Effective incentive mechanism	*Transparency of remuneration* plays a crucial role as well as the fact that *discriminating remuneration systems* are *discouraging*. In crowd solving systems, extrinsic motives of crowdsourcees are considered to be as important as intrinsic motives (e.g., joy of performing innovation tasks). For highly intrinsic motivated individuals, enjoyment and peer-recognition are more important. For this, the following incentives are implemented: *(1) Gamification* (e.g., announce the fastest workers within a specific crowdsourcing project); *(2) 'badging system'* (e.g., a badge for the 'crowdsourcee of the month'); *(3) development of a community for peer-communication* within the platform.
Task allocation mechanism	Crowd solving projects are completed successfully and fast when certain tasks are distributed to the 'right' crowdsourcees, i.e., crowdsourcees who are experienced with certain tasks and enjoy handling them. Intermediaries can select the most appropriate crowdsourcees by *keeping statistics* (e.g., what kind of tasks has each crowdsourcee been successful at) and by *establishing functionalities* (e.g., a selection box with different kinds of tasks) on the platform with which crowdsourcees are able to enter their favored tasks.
Quality assurance mechanism	In crowd solving systems, quality control is *not automated* because contributions strongly differ. Therefore, submitted solutions are *sample checked* by intermediary workers. They determine whether the *previously defined outcomes* and the *previously defined requirements* (e.g., solution must have a certain level of detail) are realized or not.
Membership management	A *structured registration process* is implemented for three reasons: (1) to obtain relevant information about the applicants (e.g., age, work experience, etc.); (2) to ensure that only individuals who are willing to contribute become part of the crowd; (3) to incorporate/ induct applicants in specific tasks. Before becoming a member of the community, applicants enter their demographics and subsequently *perform several sample tasks*. Thus, new members' skills and competencies are scrutinized based on the results of these pre-tests. However, the general rule is: The pre-tests have to at least be passed in order to become a member of the crowd. This phase is referred to as the *'induction phase.'*

Precise set of regulations/ agreements	For a crowdsourcer, sourcing out confidential tasks (such as testing or innovation tasks) contains the risk of revealing relevant know-how. Therefore, creating confidentiality is one of the most critical challenges for the analyzed crowd solving systems. Confidentiality is ensured by *non-disclosure-agreements* (NDAs) that have to be accepted by crowdsourcees before they are able to perform tasks.
Crowd qualification mechanism	Achieving and then retaining a 'qualified crowd' is a crucial issue. For this, several measures are implemented: Within a so-called *permanent coaching*, crowdsourcees have the chance to learn from intermediary workers or experienced crowdsourcees. Provision of *tutorials* (e.g., video tutorials) is another measure for enhancing crowdsourcees' abilities.

Table 2.   Preliminary Results of Identified Governance Mechanisms.

5   Expected Contribution and Future Work

Given the lack of empirical research on governance mechanisms for crowdsourcing information systems, our primary objective is to achieve better understanding of what kind of, and how, governance mechanisms are implemented in such systems. Hitherto, we have found and analyzed an initial set of governance mechanisms used in crowd rating, crowd processing as well as crowd solving systems. An initial comparison of the implemented governance mechanisms in the three analyzed settings shows that relatively more mechanisms are used in crowd solving systems (compared to crowd rating and crowd processing systems). As compared with Jain (2010) who focuses only on crowd creation systems, we have identified the following further governance mechanisms: 'task allocation mechanism,' 'task definition,' 'effective rating mechanism,' 'crowd qualification mechanism' and 'precise set of regulations/agreements.' The crowd qualification mechanism is only found in crowd solving systems. This might be due to the fact that companies are most interested in such crowdsourcing systems: they want a diverse crowd to solve tasks that are more complex than rating or simple micro tasks. Hence, intermediaries from this section try to establish a large as well as skilled crowd for being able to respond to the companies' high demands.

In the next steps, we will analyze two crowd creation systems as well. We have Quirky, SAPiens ideas community or Nokia's IdeasProject community in mind. Further, we will carry out a comparative examination in order to explain differences in the use of different governance mechanisms. This study addresses practitioners as well as the IS research community. It will contribute to the research area of crowdsourcing by showing what kind of, and how, governance mechanisms are implemented in crowd production systems. According to Gregor (2006), this is a theoretical contribution of the type of explaining by expanding the scientific body of knowledge with empirical results of several case studies which will serve to management of crowdsourcing initiatives. The multiple case studies help to bring more rigor to the management, coordination and control crowdsourcing initiatives, since the majority of current initiatives still has room for improvement, as they are most often realized by means of a trial and error approach. Hence, the insights help make crowdsourcing more manageable.

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