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INNOVATION CONTESTS, ROUTINE DYNAMICS AND INNOVATION MANAGEMENT

ABSTRACT

This paper investigates an innovation contest as organizational routine of innovation management. We draw from a qualitative longitudinal study in an industrial company. We examine the meanings, performance and artifacts related to the contest and show their mutual dynamics. Our results indicate that a common orientation towards a sense of exceptional created by the contest allows it to sustain despite discrepancies in its internal routine structure. Sufficient interpretive flexibility is central in hosting the varied private meanings and performances. The study highlights the relevance of the artifactual elements in creating the common orientation, yet leaving space for variety in meanings and performance of the contest. With these findings, we contribute to better understanding of innovation contests as tools for innovation management.

Keywords: routine dynamics, routine structure, innovation contest, innovation management

INTRODUCTION

Innovation contests have proved influential tools in problem-solving and stimulating innovations in different fields (Adamczyk, Bullinger, & Möslin, 2012). Innovation contests are used to encourage and enthuse the participants to contribute their time and ideas for the benefit of the organizing party. In exchange, the participants gain experience and feedback – and the winner earns an award and recognition (Bullinger, Neyer, Rass, & Moeslein, 2010).

Innovation contests face an important and challenging balancing act between the ordinary and extraordinary in organizations. Innovation contests disrupt the everyday routine of organizations in the pursuit of creating novelty, but this paper suggests that they simultaneously become routines themselves when organized in repetition. Whereas individual competitions aim to stand out from the steady practice of everyday work, the repeated practice of organizing competitions (e.g. annually) forms part of the work routine in innovation management. More generally, innovation management balances between status quo and novelty in supporting innovation activities, that is, “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional order” (Van de Ven, 1986, 590). In facilitating the interaction between new ideas and the current institutional order, innovation management needs to synthesize the newstream and mainstream in organizations (Lawson & Samson, 2001). Mainstream activities leverage efficiency, quality and stability in organizations, whereas the newstream activities build the force of instability (Lawson & Samson 2001). Managing this combination, and knowing how to productively disrupt operative routines and capabilities is central in building the microfoundations of dynamic capabilities (Mahringer & Renzl, 2018), which form the basis of an organization’s sustained ability for renewal (Winter, 2003).

In maintaining innovation capabilities, firms increasingly need to include actors beyond the focal organization as innovation agency becomes more redistributed (Lawson & Samson, 2001; Nambisan et al., 2017). Community and peer driven innovation has thus become more essential (Benner & Tushman, 2015). Innovation contests have a great potential in answering this new challenge and integrating different stakeholders in the innovation process (Adamczyk et al, 2012). However, the use of innovation contests as tools of innovation management still faces many practical challenges. One of them deals with building a recurring activity. If innovation contests are to be used as sustained methods for building innovation capability in organizations, as suggested, for example, by Elerud-Tryde & Hooge (2014), they need to be able to attract participation and high-quality contributions over time. Attracting repeated participation has been found challenging in crowdsourcing platforms as majority of participants drop out after initial enthusiasm, and only a small core group tends to sustain in their participation (Yang, Adamic and Ackerman, 2008). Furthermore, the “serial innovators” taking parts in contests, and crowdsourced innovation more generally, tend to be stifled by the fixation effect, which refers to the tendency to (unconsciously) produce ideas similar to their past successes (Bayus, 2013). Other challenges lie in the engagement and motivation of different participants (Adamczyk et al, 2012; Füller et al, 2014), and the balance between competitive and cooperative interactions (Hutter et al, 2011). More generally, the use in firms’ internal innovation processes has been severely understudied and the practice of improving employee engagement in innovation activities with contests is still largely unexplored (Elerud-Tryde & Hooge, 2014; Terwiesch & Xu, 2008).

This paper argues that adopting the lense of organizational routines has the potential of improving our understanding of innovation contests as recurring practice of innovation management. We suggest that as repetitive recognizable patterns of interdependent action with

multiple actors and shared principles, they can be referred to as routines (Feldman & Pentland, 2003), which have the capacity to contribute to the process of creativity (Fortwengel, Schüssler and Sydow, 2017) or the maintenance of dynamic capabilities (Teece, Pisano, & Shuen, 1997). Despite growing interest in innovation contests in organizations (Adamczyk, Bullinger, & Möslin, 2012) and in their contribution to innovation capabilities (Elerud-Tryde & Hooge, 2014), there is still a lack of studies around the routine elements of these tools. To the best of our knowledge and based on the extant literature reviews on organizational routines (Becker, 2004; Hansen & Vogel, 2011; Parmigiani & Howard-Grenville, 2011), there are no previous studies on innovation contests that would have adopted the routine lens. A routine perspective has shown its prominence in capability and innovation literature (e.g. Jones & Craven, 2001; Nelson & Nelson, 2002), and it has been noted to provide a suitable lens for examining the interaction between the micro and macro levels of organizational action (Salvato, 2003). The routine literature can thus offer valuable insight into the way innovation contests (and routines of innovation management more generally) are realized in the everyday practice of organizational actors. Thus, this paper focuses on the question: How does an innovation contest sustain as an organizational routine in innovation management?

We answer the research question with a case study of an innovation contest geared towards communicating a sense of exceptional and aimed at bringing novel perspectives into an established technological company. The contest was directed towards summer trainees and it had been organized in a similar manner for several years during the summer months. The contest was organized by the innovation management team of the company while several other organizational actors participated at some point of the process. While observing this competition, Avenues for Innovation (A4I), our attention was drawn to the discrepancies between public performances,

where innovation contest was strongly enacted, and private meanings, where A4I was hardly considered a contest at all. This led us to explore the dynamics between the meanings the participants gave to the contest (ostensive elements of the routine), their performances during the contest (performative elements of the routine) as well as the artefacts related to the event.

Through examining these internal dynamics of the innovation contest, we explain how and why such a routine maintains its meaningfulness as an organizational routine in innovation management, despite significant discrepancies between the artifactual elements and other parts of the routine. We demonstrate how these discrepancies actually help to maintain a sense of exceptional in the midst of the daily routine of both the organizers and participants, and how they interactively sustain the value of the innovation routine through a combination of private and public meanings. These insights contribute to the understanding of innovation contests as tools of innovation management.

The paper is structured as follows. First, we discuss literature on innovation contests and routines. Second, we present the research design with the empirical context, data and analysis of the study. Third, we present our findings in two sections and discuss their contributions.

THEORETICAL BACKGROUND

Innovation contests

Innovation contest can be defined as “competition for innovators who use their skills, experience and creativity to provide a solution for a particular contest challenge defined by an organizer” (Bullinger, Neyer, Rass, & Moeslein, 2010, 291). Different kinds of contests (Adamczyk et al., 2012), tournaments (Connelly et al., 2014) or jams (Bjelland & Wood, 2008) are organized in order to crowdsource solutions from either outside or inside the organization to

support organizational innovation activity and integrate various stakeholders as a part of the innovation process (Adamczyk et al., 2012; Terwiesch & Xu, 2008; Westerski, Dalamagas, & Iglesias, 2013). Innovation contests can contribute to different phases of the innovation process (Mortara et al., 2013) and also influence organizational change (Klein & Lechner, 2009). Innovation contests are characterized by key elements, such as rules of participation, information on roles, explicated selection criteria and the selection of a winner (Adamczyk et al., 2012). Innovation contests provide the participants with reward, recognition and constructive feedback about their competences and are thus an informational or enabling environment for the participants (Bullinger et al., 2010). The focus in setting up and advertising innovation contests is usually on the winning solution as well as the competition between participants (cf. Boudreau, Lacetera, & Lakhani, 2011). This element of competition has been noted as important in driving innovation as it establishes clear incentives for innovating as well as creates temporal momentum for offering one's contribution (e.g. Bullinger et al., 2010).

One of the challenges in innovation contests is whether and how to build a recurring activity. A few studies have looked at the repetitive nature of crowdsourcing activity. Yang et al. (2008) studied web-based knowledge sharing market in China and noticed a paradox in the participants' performance. Over time, most users became inactive while a core group increased their win-to submission rate over time. This implicates the importance of identifying the promising participants and incentivizing them to maintain their presence in the platform. Bayus (2013) showed that serial ideators tend to produce more valuable ideas than single-idea- consumers. However, the past success had negative effects on future proposals as the ideators ended up generating less diverse ideas that were less exciting for organizations to implement. According to this study, diversity at the commenting activity may remove the fixation effect. If the ideators

commented on diverse set of others' ideas, they were more likely to produce ideas that the organization would find valuable for implementation. (Bayus, 2013.) This points at the importance of community and collaboration in building a successful, recurring innovation contests.

Innovation contests have shown to promote both competitive and cooperative interactions (Bullinger et al, 2010; Hutter et al, 2011; Füller et al, 2014). The cooperative interactions occur especially when contests provide community functionalities and when the contest activity fulfils other motivations besides the act of winning (Hutter et al, 2014). This can be supported by enabling member collaboration through communication and interaction, ensuring appropriate rewards and, attracting “communititors”, who show both competitive and collaborative behaviors (Hutter et al, 2014). By exploring the heterogeneity of participants, the study of Füller et al (2014) illustrated the rich variety of interactions and roles that an idea contest may include and highlighted the relevance of social structure in innovation initiatives. They demonstrate how investigating the underlying motives of innovation contest participants and their impact on behavioral patterns is essential in understanding how and why innovation contests succeed or fail (Füller et al, 2014).

In addition to involving external stakeholders in a company's innovation process, innovation contests are a way to involve companies' employees, as well (Bjelland & Wood, 2008). Although the research on this front is still scarce, a recent study by Elerud-Tryde and Hooge (2014) in car industry demonstrates how in-house innovation contests can encourage employees' idea generation and involve both employees and managers simultaneously in innovation activity (Elerud-Tryde & Hooge, 2014). The results of the study highlight the benefits innovation contests have for supporting corporate innovation beyond mere idea collection. The study of Elerud-Tryde and Hooge (2014) shows how finding good ideas was not the primary goal of the virtual idea campaigns but, instead, they were used to promote innovation and stimulate collaboration among

employees, which ended up producing innovations. (Elerud-Tryde & Hooge, 2014.) This kind of activity supports a company's innovation process as it involves relevant stakeholders in generating and selecting innovation ideas and thus commits them in the process.

Despite the growing interest in innovation contests, there are still several open questions regarding their use to support organizational innovation. One of the understudied areas of innovation contests is their integration to the internal innovation processes of companies, and their potential in effectively serving innovation management (Elerud-Tryde & Hooge, 2014; Adamczyk, Bullinger & Möslin, 2012). Despite the learnings from previous studies, much uncertainty still exists with respect to questions related to understanding the challenges related to running innovation contest, developing the created ideas into innovations, and attracting, engaging and facilitating participation (Adamczyk et al, 2012). Terwiesch & Xu, 2008). Furthermore, most of the current research on innovation contests has been conducted in an online context, and there is thus a need to examine innovation contests in real-life team setting. From a theoretical standpoint, innovation contests have predominantly been studied through the lens of economic theories, which have focused on the competitive elements of contests and incentivizing use (e.g. Aoyagi, 2010; Casas-Arce & Martínez-Jerez, 2009; Fullerton et al.; 1999, Connelly et al., 2014). The use of other theoretical lenses, such as management (Kokshagina, Masson, Weil and Coge, 2016) or organizational theories (Wen & Chen, 2007) have an opportunity to increase understanding of innovation contests as part of innovation management and organizational action, more generally.

From the standpoint of organization theory, innovation management deals with the basic question of how to simultaneously generate stability and renewal. How to maintain an organizational routine in innovation, but still bring about novelty? As the extant research on

innovation contests has largely ignored the internal innovation context and underutilized organizational theories, very limited attention has been paid to this issue. In this study, focusing on the microfoundational processes that contribute to maintaining the routine of renewal, we aim to build a deeper understanding of the innovation contests in organization's innovation activity. In order to understand better what it means to examine an innovation contest as an organizational routine, we turn next to discussing the routine literature, focusing particularly on routine dynamics.

Routine dynamics

Routines bring meaning to organizations. Through routines, organizations can undertake their purpose (March & Simon, 1958; Thompson, 1967). Understanding how these repetitive patterns of actions build either stability or change in organizations has provided essential understanding of the core dynamics of organizational action through several decades of research (Becker, 2004; Feldman, 2000; Feldman & Pentland, 2003; March & Simon, 1958; Nelson & Winter, 1982). Recent developments in routine research have shown more attention to the day-to-day enactment of routines in organizations (Parmigiani & Howard-Grenville, 2011) and their internal structure (e.g. Pentland & Feldman, 2005). The practice perspective has offered a way to overcome the tendency to inspect routines primarily on the level of their purpose or outcomes instead of the way they are actually performed. The practice perspective aims to tackle this of “blackboxing” tendency by bringing the focus to the day-to-day enactment of the routine, instead of focusing, for example, on the effects of an innovation management routine on organizational performance (Parmigiani & Howard-Grenville, 2011). The internal dynamics perspective, grounded in structuration and practice theory, offers a micro-oriented way of inspecting routines, and aims to create new understanding of the structural elements and multiple perspectives relate to a routine – as well as the discrepancies between them (Dionysiou & Tsoukas, 2013; Feldman &

Pentland, 2003). Routines are seen to include three structural elements: the ostensive, performative and artifactual constituents (Pentland & Feldman, 2005). Of the three elements, the ostensive refers to the meaning of the routine, the performative to the way it is enacted by the participants at a particular time, and the artifacts to the tangible, concrete elements connected to the routine (Feldman & Pentland, 2003). The role of artifacts has lately received more empirical attention (e.g. D'Adderio, 2014; Sonenshein, 2016), balancing their previously scarcer attention. For example, Howard-Grenville (2005) have emphasized the role of artefacts in informing the actors' orientation in enacting the routine, making studying all the three routine elements and their interaction equally important (cf. Pentland & Feldman, 2005).

Routines are fundamentally collective, which means involvement of multiple actors or communities, linked by interaction (Becker, 2004). Dionysiou and Tsoukas (2013) have argued that in performing a routine, participants engage in role taking and take their own and others' understanding into account when identifying appropriate actions. Empirical research has shown how these multiple actors shape the patterns of the routine by their motivations, actions and interaction (Howard-Grenville, 2005; Stiles et al., 2015; Zbaracki & Bergen, 2010), and how the multiplicity of ostensive patterns brings diversity in the routine (Feldman, 2000; Turner & Rindova, 2012). For example, Turner and Rindova's (2011) study on waste management routine showed how customers participating in the routine had, due to their different role, different expectations and performance in the routine than the employees of the companies. This infers that the actors may enact the routine according to individual or group ends, which can be different from the organization's goal. These different understandings may be hidden and become visible only until under change in the routine (Zbaracki & Bergen, 2010). Therefore, especially if some of the actors of the routine are outside the organization, the performance of the routine requires

coordination between the different actors (Turner & Rindova (2011) For developing innovation capabilities in the newstream-mainstream relationship, and even beyond the traditional boundaries of the firm (Lawson & Samson, 2001), the actors' different understandings and the coordination of their performance become highly relevant for managing the collaborative environment of an innovation management routine.

METHODS

Case selection

We conducted a longitudinal qualitative case study in a globally operating industrial company that develops and manufactures heavy equipment technology. The company is particularly innovative in its industry, and has invested actively in developing its innovation processes, tools and methods. As a part of this effort has been a well-organized innovation team whose task is to support and stimulate innovation activities in the organization. The tasks of the team include managing the corporate idea system, building an innovation culture, training innovation facilitators and organizing innovation contests. This case company was, thus, selected as it offered a case where innovation activity is organized in a prototypical manner (Pratt, 2009), represented an innovative company in its industry and provided good access for data collection. The innovation contest organized by the case company offered a valuable opportunity to study an innovation routine in action. It had been carried out yearly and it offered a repetitive and recognizable pattern of actions to study. Also, it involved not only the innovation management group but multiple actors across the organization and thus provided opportunities to study the potential divergence and convergence in the patterning of the actions. With these characteristics (1. Repetition, 2. Recognizable pattern of action, 3. Multiple participants, and 4. Interdependent actions), the innovation contest meets the definition of an organizational routine by Feldman and

Pentland (2003). Furthermore, previous literature has shown how temporary change-delivering activities, such as projects (Turner & Müller, 2003) or contests, can be analyzed through the routine lens (Bredillet et al., 2017).

The Innovation Contest: Avenues for Innovation, A4I

Avenues for Innovation (A4I, pseudonym), is an innovation contest that has been repeated yearly in the case company since 2008. The innovation management team organizes the contest for its summer trainees. The summer trainees are students from surrounding universities and universities of applied sciences, which apply for summer employment (two to three months) in the company to get experience from their own area of expertise. During their employment, they have a full employee status and they are paid for their work. For many of the summer trainees, it is not a one-off employment but, instead, they typically work for the company during several summers (although each contract is individually negotiated). Some of them even continue as part-time employees during the winter. In addition to their summer employment duties, they are invited to take part in the A4I contest. Other company representatives, mainly technology managers and experts, act as stakeholders for the contest, for example, by providing the contest with topics to be solved, or acting as jury members in choosing the winner. These research or business unit representatives may also act as problem owners in the contest, offering a problem statement and guidance for the summer trainees during the contest. The innovation management team (four to five people) organizes all A4I-related events, prepares presentation and information materials, compiles the teams (based on trainee preferences), informs the organization of the contest, and chooses the winner with the jury. That is, they manage the entirety of the routine. The contest has an established structure and pattern of actions, which are depicted below (Table 1).

TABLE 1
Steps of the A4I routine at the case company

Steps	Who and when	How steps are enacted
Choosing topics for the contest.	IMT as main actor, research and business unit representatives as second-order actors , February to May,	Among their routine interaction with research and business unit representatives, IMT initiates the dialogue of potential topics for A4I. The aim is to select the topics and find volunteers as problem owners for A4I. Mostly email interaction with the other parts of the organization. Approaching people from previous years. When finding problem owners, also personal discussions with them.
Invitation to participate.	IMT as main actor, STs as second-order actors , approx. 1 -2 weeks before the kickoff	IMT sends an email invitation to participate to all STs. If willing to participate, STs seek permission from their managers. For some STs, their supervisors encourage to attend and provide information.
Kickoff event	IMT as main actor, STs as second-order actors. Early June. .	Welcome words from the innovation manager, the leader of the IMT. Another IMT member gives a presentation of the tasks at hand. STs are encouraged to choose their topic and apply for it.
Application process	IMT as main actor, STs partake. . Within a few days of the kickoff.	STs submit their three favorite problems in an order of preference and the IMT assigns them to project teams and nominates a team leader (communicated via email).
Working period 1	STs as main actors, IMT and POs in supporting role. From the kickoff to mid-July. .	Begins with a meeting with the PO (organized by the IMT), continues as autonomous work by the ST teams who interact through regular meetings, chat or email. Innovation management offers help if needed, for example related to resources for making the prototypes.
Mid-term event	Organized by the IMT, STs in provide the content. Mid-July.	Teams present the directions they have taken in the task in order to receive feedback mainly from their peers, but also from IMT
Working period 2	STs as main actors, IMT and POs in supporting role. Mid-July to Mid-August.	ST teams continue working independently on their solution. IMT and POs provide support based on teams' needs. At this point teams also have to write a final report which they hand in at the final event.
Day of Innovations, final event	Organized and hosted by the IMT, ST teams in major role. R&D managers as jury members. Mid-August.	Final presentations by the ST teams. An external jury of R&D managers evaluates the ideas and chooses the winner of the contest, IMT declares the winner with a reward ceremony. Finally, an informal after party for all.
Further development and implementation	IMT in main role linking the IC with the innovation process in the company. Research and business unit representatives as stakeholders. From Mid-August onwards.	IMT continues the work with the ideas created in the contest and takes them to the agenda of research and innovation unit's board meeting. Decisions of further development and implementation actions are taken together with research and business units, according to the innovation process of the company. STs finish their summer employment and exit the organization to return to their studies.

Innovation management team (IMT); Summer trainees (ST); Problem owners (PO)

Data sources

Using qualitative methodology, we collected data for the eight-year period that A4I had taken place in the company. Six years (2008-2013) were retrospective and during two years (2014-2015) we tracked the A4I in real-time.

The retrospective data consists of company documentation of the innovation contest (materials such as A4I description and presentations at the events) as well as summer trainees' final reports presenting the outcomes of their work and survey data (collected by the case organization) tracking their experiences. During the real-time data collection, we collected interview, observational and document data. We interviewed individuals in all the main roles (innovation management team members, summer trainees, problem owners). The interviews, 49 to 100 minutes of length, were recorded and transcribed verbatim. We conducted participant observation at the key events (kick-off, mid-term, final event) and also observed the participants before and after the meetings. In the first year of the real-time data collection, we followed four summer trainee teams of the eight participating teams in more depth. These teams' meetings with the problem-owners as well as internal team meetings were observed by the first author. Eight of the summer trainees also wrote diaries, in which they reported their actions, interactions and reflected on their experiences. Throughout the process during the two years, we engaged in informal conversations with the innovation management team members responsible for organizing the A4I. The observation data gave us insights about the A4I process and formed the basis for the interviews. We took field notes of these interactions and our experiences on site. The field notes were written up within 24 hours (Yin, 1994). We also collected systematic written data including e-mail messages, meeting and event invitations, event materials, teams' final presentations and company documentation concerning the A4I. The data are presented in Table 2.

TABLE 2. **Data**

Data collection method	Data source	Number and length	Type of data
Observation	Main events of the contents (Kick off, Mid-term, Day of Innovations)	5 (17h)	Field notes (2014-2015)
	Meetings (summer trainees & problem owners)	4 (6h)	Field notes
	Summer trainees' meetings	4 (6h)	Field notes
	Innovation management meetings	1 (2h)	Recording, field notes, meeting material (powerpoint)
Reflection meetings	Innovation management team members	2 (4h)	Tape recorded, field notes (2015)
Interviews	Summer trainees	29 individuals (8 group interviews, 8h)	Recordings (2014-2015)
	Innovation management team members	6 (7h)	Recordings (3) or field notes (3) (2014-2015)
	Problem owners	4 (4h)	Recordings (2014)
Diaries	Summer trainees	8	Written documents (2014)
Documents	Invitation to A4I		E-mail (2014-2015)
	Kick-off material	4	Power point (2012-2015)
	Summer trainees' reports	46	Written reports (2008-2015)
Feedback surveys		3	Webropol surveys (2013-2015)

Data analysis

Overall, our analytical approach follows our ontological positioning within practice-based research of organizational creativity (Fortwengel et al., 2017). This means that in studying routines, we acknowledge the mutually constitutive nature of stability and change, and the role (routinized) practices play in creating both. We also believe that while entities and processes are highly interdependent, they can still be analytically distinguished (ibid).

The analysis process included several phases, iterating between theory and data (following an abductive approach, e.g. Dubois & Gadde, 2002). The process started with detailed bottom-up analysis of interview transcripts, field notes and documents, with the use of Atlas.ti software. We identified and coded the structural elements (ostensive, performative, artifact) of the routine and their interactions. For the ostensive element, we looked at how the different actors depicted the meaning of the A4I and how they made sense of the contest more generally. For the performative aspect, we looked at how the A4I was enacted and what actions and interactions different actors engaged in during their participation in the contest. For the artifact, we looked at the tangible, concrete elements connected to the A4I. Open coding of the interactions between the ostensive, performative and artefactual parts of the routine led us to identify the alignments and discrepancies between the elements.

Next, we examined in more detail how these structural elements were understood and enacted by different actors. This was important as earlier studies (cf. Howard-Grenville, 2005; Turner & Rindova, 2012) note that the different understandings and performances of the actors bring diversity and potential discrepancy into the routine. During this phase, we noticed that there appeared to be a public and private side to the A4I and the dynamic between these sides seemed to mediate the structural discrepancies we were seeing. Drawing from Dionysiou and Tsoukas (2013), we paid more focused attention to the relational aspects of the routine and analyzed the

privately held (individual) and publically shared (shared) meanings and enactments within and between actors. Comparisons of the private and shared elements of the different actors led us to notice the alignment of all the public elements across the different structural elements. Similarly, we noticed alignment across the private meanings. Linking these two observations together (discrepancies between routine elements and alignments in private and public enactments), resulted in discovering two processes of maintaining meaningfulness of the routine, one associated with shared sense of exceptional and the other with the flexibility related to each group's individual orientation. Figure 1 shows how the findings were derived from the data.

Figure 1. Analysis structure

FINDINGS

We discuss how the different parts of the routine – the artifact, ostensive and performative – are enacted by the the different actors. We draw attention to the dynamic between the performances of the different actors - particularly from the perspective of the public and private

meanings of these performances. Interestingly, despite certain detailed differences, the private meanings associated with the ostensive and performative parts of the routine were for the large part aligned between the groups, despite being kept private. These private meanings were, however, discrepant with the shared, public meanings of the A4I, which maintained the dominant discourse of the competitive nature of the innovation contest and were fortified by the artifactual elements.

Artifactual elements

The artifactual elements set the scene for the publicly shared meanings in A4I. The artifacts communicated a strong sense of A4I as an important innovation contest for the organization. The PowerPoint slides the innovation team members presented in the kickoff event communicated how the company needs “*to stay competitive and grow*” and how “*input from outside is needed to stimulate new winning ideas*”. The imagery of the slides portrayed the winners of previous year receiving a reward check as well as other competition-oriented imagery. The picture of the last year’s winning team was updated on the slide set before each new contest round. Despite the minor updates, the slides did not change along the years. Thus, the artifactual element was only marginally rebuilt along the repetition. The names of the events communicated strong innovation orientation as, for example, the final event was called “the *Innovation Day*”. The structure of the contest and the way this was communicated to the attendees also effectively represented different elements of an innovation contest. A kickoff event was held with a festive invitation and a generous time allocation, a clear challenge was presented for the participants, a reward was explicated for the winning idea and a time frame for the activity was established. A suggested time use was also articulated (4 hours per week) as well as the resulting outputs (final report, presentations). The materials highlighted the company’s need to gain fresh perspectives and input for innovation

activity. For example, a PowerPoint slide titled “Why A4I” explained the reasons for running A4I in the following manner:

“When people work together, their views tend to congregate, and therefore input from outside is needed to stimulate new winning ideas”

In the same presentation, the summer trainees were referred to as “*young talent*” to whom current challenges found in the organization are presented, who apply their skill and perspective in solving them, and, finally, “*present a kick-ass solution to the need/problem/opportunity*”

Ostensive elements

The ostensive element illustrates the different actors’ perceptions of what the routine is and what makes it meaningful for them to participate.

Publicly shared meanings of the routine. For the innovation management team, the ostensive part carried the intention of engaging the summer trainees in innovation-related activities and harnessing their ideas and perspective in a meaningful way. They felt that the contest was a good opportunity to gain fresh insight for the innovation activities in the organization. They were hoping to see daring ideas and openings, which they could then refine further within the organization. This part of their ostensive understanding was clearly and openly communicated to all participants – and also portrayed in the artifactual elements.

For the summer trainees, the ostensive elements held similar connotations. The summer trainees perceived the organizers’ motivations being found in gaining fresh perspectives but also to gain input from the summer trainees who are less busy than the permanent employees. Thus, the summer trainees felt that they were used as an extra resource for the company’s innovation

activities. They thought that the ideas generated for the contest would be used in some form – even though it would not be all of them or even the one they were personally working with.

Also the problem-owners characterized the activity as a way of getting fresh ideas and new perspectives, thus sharing the same public ostensive with the innovation management team and the summer trainees. They emphasized their need to find a solution to a particular problem, and communicated their interest towards the potential solutions the trainees could offer.

Although the publicly shared ostensive meanings seemed to be well fitting with the frame laid out by the artifactual elements, there was still a discrepancy with the competitive elements related to the A4I. Whereas the artifacts were clearly oriented towards an innovation competition, none of the actor groups seemed to actually perceive A4I as a competition in the level of their ostensive meanings. Instead, the shared ostensive meanings focused on the search for novel ideas for the organization. When asked about the relation of A4I to a competition, one of the members of the innovation management team explained to us how A4I was not a competition but something lighter:

“It is a competition in the sense that only one main prize is distributed and several teams are competing for it. But we don’t accentuate the competitive element at any point. More the fun related to finding and doing [new things]. ... perhaps working in a team is more the challenge, the greatest challenge, not the competition between the teams. ... it is an innovation spur ... something less than a competition”

Also the summer trainees made sense of the A4I as something else than a competition. They argued that because the problems the teams worked with were highly different, they could not see A4I as a competition. In a competition, the starting point should be equal and in this case

the characteristics of the challenges varied significantly. Some of the summer trainees further explained that they cooperated openly with other teams because it was not really a competitive setting. Ideas were discussed openly, because no-one was truly concerned of losing a winning idea.

Private meanings of the routine. All the actors had ostensive meanings they were less willing to share with the other performers. For the innovation management team, one of these was the ability of A4I to support the motivation of the summer trainees. They felt that the reward element would motivate the summer trainees to go the extra mile and have the motivation to work hard on their ideas. Hence, it was important to organize A4I as a competition. They also felt that the activity was fun for the summer trainees and brought more meaning to their mostly routine tasks during the summer. This aspect the innovation team did not actively share with the summer trainees, even though the presentation speeches and materials included the element of “having fun” while innovating. For example, at the kick-off event, a member of the innovation management team ended the event by showing a Power Point slide with the text “*Then just innovate and have fun with the case!*”. Primarily this sense of fun was in the publicly shared meanings linked with the inspiring nature of innovation activity, and a side product of the creation of novel ideas for the company - rather than a goal in itself.

Also the summer trainees saw the competition as having an effect in motivating them and providing them with meaningful things to do during their summer employment. They said that the competition inspired them in the midst of their potentially boring everyday tasks and also enabled them to familiarize themselves with the company. Accordingly, one of the summer trainees described the contest as a “boost” for their work practice. This interpretation was similar among the first-timers and those who had participated in the contest more than once, through several summer employments. It also recurred in the yearly feedback surveys, in which the summer

trainees reflected their participation in A4I. These ostensive meanings were not, however, discussed in the joint spheres with the innovation team or the problem owners, but remained as private contemplations of the summer trainees (shared within their group). Further, the summer trainees also perceived A4I as a good way to gain experience and skills that helped them in their studies and, in particular, in preparation for work life. The summer trainees participated in the innovation management routine only temporarily, their ordinary routine being found in becoming a professional in the field where their traineeships were located. The summer trainees thus used A4I to support their ordinary routine and felt that it offered a good chance to practice their presentation and project skills as well as network with other students and employees of the company.

For the problem owners, the private ostensive meanings seemed to vary. One of them told us that A4I was a good way to meet with students and get to know them, while another emphasized the possibility to promote ideas in the organization that would not otherwise get management's attention. A third problem owner stated that he had a personal interest in the technology that was applied in the project and that he saw A4I as a chance to be involved with a personal hobby during office hours. The problem owners, then, did not seem to form a unified team with respect to the private meanings - which is not very surprising as they were neither in interaction with one another nor closely involved in performing the routine. They were also not provided with any role descriptions with respect to what was expected of them – or what they could expect themselves. They saw the same artifacts as the interns and innovation team, but were more rarely present at joint events. Thus, for them, their own personal interests seemed to be most relevant in making sense of the meaningfulness of the activity.

Performative aspects of the routine

The performative element illustrates the actions and interactions related to A4I, that is, how A4I is enacted in practice. We will discuss both the public and the private performances of different actor groups. Here, the public performances include the shared performances between the actor groups (mainly, A4I events) as well as the meetings between the summer trainees and the innovation team, whereas the private performance connects with actor groups' private (inter)actions.

The public performances of the routine. The public performances were relatively well aligned with the artifacts and shared ostensive meanings between the actor groups. However, at times the private meanings influenced the enactment of the routine in ways that were visible also in the public events and interactions.

The innovation management team orchestrated most of the joint gatherings and demonstrated in their presentations alignment with the elements of the innovation competition and the shared ostensive meanings. They advertised the events and the competition with enthusiasm, highlighted A4I's usefulness to the company, printed a large cheque for the winning team, and generally followed a typical innovation discourse in their materials and oral presentations. They also made sure to recruit an influential jury for evaluating the ideas and aimed to make A4I well known in the organization. For the innovation team, the A4I was part of carrying out their everyday work. While the sense of an exciting innovation contest was captured well in the communication materials, presentations and the structure of the contest, the sense of ordinary sometimes overtook in their public performances. This meant that time constraints, prioritizations and linkages to other parts of their work pushed through at times. This was particularly visible in the temporal arrangements and allocations related to A4I. A clear time allocation of 4 hours/week was accentuated by the innovation management team in their

presentations. Rather than being connected to innovation arrangements, such as Google's famous 20% to work on your ideas, it was linked to the need to "*get real work done*" and to the fact that it "*cannot all be fun and games*" when working in a company. The statements placed A4I to a position of a fun, extracurricular activity, rather than a serious innovation task conducted to benefit the company. In this sense, the private meaning of motivating the trainees with something fun leaked to the public enactments of the routine.

This tension with respect to temporal arrangements was also present in the events of A4I, particularly in the grand finale - the Innovation Day. Despite its name, the length of the event was no more than four hours. Of this time, only 2 hours was reserved for team presentation, with no breaks in between. This time frame placed significant time pressure on the team presentations, which were narrowed down to merely 15 minutes per team, inclusive of questions. Coffee was served after the presentations, while the jury was deliberating behind closed doors. This processual set-up created a general sentiment of rushed, school-like presentations, with energy levels falling towards the end. Instead of a grand finale of a valued innovation competition, this performance resembled a set-up where the final presentations of summer projects were presented in a maximally efficient manner.

Furthermore, whilst an impressively high-ranking jury had been persuaded to attend, their presence had not been communicated to the trainees in beforehand, and their presence was not leveraged in creating a sense of importance. Also in the performances of the jury, hasty and unsystematic setting characterized both the decision-making meeting and the announcing the results. In the jury session, there was a short, unstructured discussion over the ideas, rather than a systematic evaluation and discussion of each idea. Some jury members appeared confused by this setting and also requested for some more structure. It appeared that the jury members, most of

whom had not been otherwise included in the competition, took the competitive nature of A4I seriously and were unsettled when it was not apparent in the performance of the jury. In communicating the results of the competition, the lack ceremonial character continued. The teams did not receive a well-articulated feedback or evaluations of their work but rather a general “everyone did well” notion and the winner was revealed casually, almost in a side note. Interestingly, these aspects did persist in the routine although they were discussed among the innovation management team between the two rounds of real-time data collection. The private meaning for that leaked through in these performances, in addition to the general sense of ordinary for the innovation management team, was that this “final event” was only a step along the way to process potentially valuable ideas. In the coming weeks, the team evaluated the results in more detail and discussed what ideas could be made use of in development projects.

The summer trainees’ public performances were also mainly aligned with the artifacts and shared ostensive meanings. Despite the rushed feeling of the Innovation Day, they carried out their presentations in a “pitch-like” manner and seriousness, and generally were serious about solving the problem at hand. They never questioned the competitive nature of A4I in their interactions with the innovation management team or other organizational actors they interacted with. The summer trainees’ interactions with other organizational members during the summer reciprocally communicated a valued, well-known activity within the company. For example, the good reputation of the competition enabled the summer trainees to contact personnel throughout the company and receive fast and helpful responses. Many of the summer trainees reported being positively surprised of the easiness to get replies for their emails, which was considered as exceptional compared with the normal practice. Also the summer trainees’ private ostensive meanings leaked to the public performances at times. For example, while they carried out serious

presentations of their ideas at the final event, they still seemed to be making “assignment presentations”, rather than idea pitches. Also, the summer trainees had not selected the most outspoken members to hold the presentations but rather gave everyone the chance to talk.

The directiveness of the private ostensive meanings was also visible in the actions of the problem owners. Only some of them attended the events, and some of them did not participate at the first meeting with the summer trainees, either. This meeting had been booked by the innovation management team and was supposed to be such where the problem owner’s presence was crucial. Other problem owners were enthusiastically partaking in all events and meetings, and even taking the stage instead of the interns. The problem owners thus seemed to follow whatever they felt interesting and useful for them in the project. The ones that felt that their participation allowed them to invest time in their personal hobby offered considerable time, effort and enthusiasm into A4I. Those who were there to pitch a particular idea seemed uninterested in attending general events and those who wanted to interact with students were less interested in coaching the contents of the idea.

The private performances of the routine.

In the private performances, the participants were nearly exclusively acting according to their private ostensive meanings. The innovation management team aimed to take care of it as efficiently as possible and keep the innovation activity ongoing also during the summer and the holiday period. Time management was an issue, and they had to, for example, reschedule the final event twice in order to accommodate other, more pressing priorities. The innovation management team was interested in what the teams would come up with and looked forward to the fresh perspectives. The produced ideas were viewed as material for further innovation activities by the company, and if some would actually lead to innovations, that was a great outcome. In any case,

further development would be needed from the company's part and the contest was a starting point, offering input for their continuous routine.

In the private performances of the trainees, the lack of competitiveness related to A4I was accentuated. Even though the participants occasionally speculated who would be the winner of the contest, for the most part they seemed to operate under the assumption that A4I was not a competition at all. Some of the summer trainees explained afterwards that they knew from the start which of the topics would be the winning one. Interestingly, when asked whether they had tried to work on the problem that would produce potential winner, they said they had not, because they had rather applied to work on a challenge that would be closest to their respective education and training. Hence, instead of the competitive framing, their performance was aligned with their private ostensive meanings linked with professional development, that is, chances of improving their skill sets, making relevant contacts and learning project- and teamwork. Aligned with their ordinary routine, the summer trainees performed the A4I predominantly as a project (albeit a fun one) they were conducting for the company. Thus, instead of "ordering pizza and staying late to have fun innovating" as suggested by one problem owner, the trainees were not particularly excited about spending their evenings at the office. They, privately, expressed their frustration towards the fact that their main task did not include slack time to cover for the allocated 4 hours, and many experienced that full participation in the innovation activity would have required much more time than allocated.

DISCUSSION AND CONCLUSIONS

Our paper has several insights that contribute to the existing understanding of contests as tools for innovation management. We provide insight into the enactment of innovation contests – and, more specifically, the variation creating but routinely organizing nature of innovation management. In addition, our study provides understanding of the routine dynamics of innovation contests and their sustainability despite discrepancies embedded in their structure. The research question we set out to answer is: How does an innovation contest sustain as an organizational routine in innovation management? Our findings indicate that the innovation contest, A4I (Avenues for Innovation), was able to sustain as recurring practice of innovation management due to the flexibility in its routine dynamics. In the following, we will discuss these main findings and their contributions.

With this study, we have demonstrated how an innovation contest faces and accommodates the tensions between ordinary and extraordinary in organizations. Our results draw attention to how innovation contests need to balance between these forces and we further argue that managing this tension is important for an innovation contest to sustain over time. The establishment of dynamic capabilities necessitates combining the newstream and the mainstream (Lawson & Samson, 2001) or disrupting the existing routines while still fitting together with the institutional order (Mahringer & Renzl, 2018; also Van de Ven, 1986). This means that routines whose task is to introduce novelty into the current system, must find a way to bridge between the ordinary and the extraordinary in order to sustain in the long run. In our case this balancing act led to the discrepancies we observed between the different elements of the innovation competition routine.

Our findings demonstrate how the artefacts and the publicly shared parts of meanings and performances were discrepant from the private meanings and performances of the routine. In other

words, even though A4I was called an innovation competition, none of the participants seemed to actually understand or perform it as one. While the sense of an innovation competition was accentuated in the materials and formal presentations related to A4I, all actor groups primarily understood and performed it as something else (a motivational tool, a possibility to gain professional skills, an opportunity to tinker with a pet idea). Interestingly, all actor groups still perceived the innovation routine as meaningful, and never questioned why A4I was established as a contest - even though they all argued that it was not one.

When inspecting these discrepancies further, we found that they were central for maintaining the sense of exceptional while bridging the innovation routine to the ordinary routine of the actor groups. The artefacts and the public meanings and performances of the innovation contest were aligned in communicating a sense of exceptional, a valued innovation competition. The private meanings and performances, then, served the needs of the actor's ordinary routine. For the innovation management team this was the practice of supporting organizational innovation (with elsewhere lying priorities), for the summer trainees it was becoming a professional in the field where their traineeships were located and for the problem owners their work practice as technology developers. Interestingly, we find that the routine not only sustained despite of these discrepancies, but they played an essential role in bridging between extraordinary and ordinary. It allowed the different actor groups to maintain their individual meanings but still gain a shared sense of exceptional that was maintained by the public artifacts and ostensive meanings. The shared sense of exceptional was able to connect the shared meanings of the contest while allowing the different actor groups to adjust their private meanings so that they did not create a complete disconnect from the shared meanings. This interpretive flexibility allowed them enough room to maneuver with their own ostensive meanings while the create sense of "extraordinary" enabled

common point of orientation that connected the participants in the sense of something special, fun and inspiring. Figure 2 illustrates this dynamic.

FIGURE 2

PROCESSES ASSOCIATED WITH MAINTAINING MEANINGFULNESS OF INNOVATION

CONTEST

By identifying the structural elements of the innovation contest and their interaction, we have shown how the meaningfulness of the contest is produced through shared and private meanings created in interaction. We have further demonstrated how the sense of exceptional acts as a shared schema binding the different participating members' views in a meaningful pattern of actions (see Dionysiou & Tsoukas, 2013). Simultaneously, it entailed enough interpretive flexibility (Bartel and Garud, 2009) to allow the different participants to perceive their private ostensive meanings and performances as compatible with the shared meanings, which held the routine together. The multiple ostensive interpretations combined with the strong public

performances thus assisted in avoiding a situation where an innovation routine becomes encapsulated in the organization and thus completely disregarded when the time limitations or other pressures from the ordinary create an opposite push. Our findings demonstrate how it is the flexibility of the routine that provides the foundation of innovation capability. We also join Howard-Grenville (2005) in demonstrating that flexibly performed routines persist better over time, due to agency and embeddedness in organizational context.

By using the routine perspective, innovation contests can be considered as repetitive activities. We extend the innovation contest literature and demonstrate how the routine elements can be identified in the enactment of the contest. We thereby demonstrate implications for questions such as how to manage contests as innovation activities involving also company's employees, repeat them and, build innovation capability with the use of contests (Eleryd-Trude & Hooge, 2014; Bayus, 2013; Terwiesch & Xu, 2008). Here, we have focused on innovation contest in industrial company, but the routine approach could be applied in any context where innovation contests are used as repetitive tools. The routine dynamics perspective and the look at the enactment of such tools can assist to avoid the tendency of blackboxing in innovation management.

Our study also addresses the multiplicity of perspectives (Turner & Rindova, 2012; Zbaracki & Bergen, 2010) and individual interactions (Dionysiou & Tsoukas, 2013) and motivations (Stiles et al., 2015) in the enactment of an innovation contest. Our findings show that what we are seeing in the discrepancy is not an enactment of a mindless routine but a set of different (and hidden) understandings that serve actor groups' different identities and motivational purposes. This understanding contributes to tackling the challenges of engagement and motivation of different contest participants (Adamczyk et al., 2012; Füller et al, 2014) and adds to previous work on innovation contests and the dynamics between the different actor groups, elements and

meanings of such competitions (Kokshagina et al., 2016; Hutter et al., 2014; Füller et al., 2014, Elerud-Tryde & Hooge, 2014). Our study and the overall shift towards distributed innovation agency indicates that innovation management has to focus more and more on this multiplicity to maintain innovation capabilities (Lawson & Samson, 2001; Nambisan et al., 2017).

Our examination adds to the innovation literature on innovation contests (e.g. Adamczyk et al., 2012; Boudreau et al., 2011; Westerski et al., 2013, Elerud-Tryde & Hooge, 2014) used to stimulate and maintain dynamic capabilities by bringing new knowledge of their use within organizations. Our study brings empirical evidence for the idea of the (re)creation of the routine through the process of interaction (Dionysiou & Tsoukas, 2013). This means that opportunities for variation can be explained by the prototypical core and periphery of the routine. The shared orientation reflects the prototypical core, which is the relatively stable part of the routine. The diverse understandings of the different subgroups represent the periphery with more detailed notions of the routine from diverging points of view (Dionysiou & Tsoukas, 2013). Our results highlight the artifact (cf. Pentland & Feldman, 2005) and indicate how it can stay discrepant from the other parts of the routine - still adding value to the entity and sustain it. This indicates the relevance of material objects in bridging the different actor groups of a routine, which matches with notions of Zbaracki and Bergen (2010) who observed that lack of material objects was the reason for the unsuccessful linking between the multiple understandings.

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