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A long way home: How an intra-organizational innovation network overcomes its political boundaries**

This article focuses on the still understudied link among political boundaries and innovation practices and its inherent boundary-crossing mechanisms in intra-organizational innovation networks. Our single case study at the sports company adidas derives two particular combinations of boundaries and boundary-crossing mechanisms to overcome political boundaries in intra-organizational innovation networks. These are the 'open-closed (minded) boundaries' and 'everybody-is-an-innovator boundaries'. They have been addressed with distinct innovation practices that comprise the boundary-crossing mechanisms 'reframe interests' and 'negotiate interests'. We find that these boundary-crossing mechanisms to be crucial in the process of managing the intra-organizational innovation network. Our findings have implications for the organizational anchoring of innovation practices given its importance as enabler or barrier to overcome political boundaries in intra-organizational innovation networks.

Key words: **political boundaries, intra-organizational innovation networks, innovation practices, knowledge exchange, innovation management, boundary management, organizational practices**
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Introduction

Organizations increasingly dedicate substantial resources to initiating and maintaining intra-organizational innovation networks to benefit from the innovative potential of their employees (Neyer, Doll, & Möslein, 2009a; Neyer, Bullinger, & Möslein, 2009b). However, whereas literature in the area of open innovation considerably advances our understanding of innovation community mechanics (Lakhani & Hippel, 2003; Shah, 2006), it seems that organizations still experiment to find appropriate tools and methods to unleash the creative potential of intra-organizational innovation networks. Previous research has identified a variety of reasons for the failure of intra-organizational innovation networks, ranging from lack of motivation (Fang & Neufeld, 2009; Roberts, 2006) to failed knowledge exchange (Bechky, 2003a; Peltonen & Lämsä, 2004). It is argued that knowledge exchange among actors from different domains and specializations is often difficult because of their heterogeneous backgrounds, values and interests (Bechky, 2003b). Conflict of interests has been identified as central factor challenging the success of innovation networks (Ojasalo, 2012). In particular, conflict of interests may result in political boundaries (Carlile, 2004). Whereas other boundaries solely relate to the cognitive dimension of knowledge exchange, political boundaries additionally consist of an emotional component (Newell, Adams, Crary, Glidden, LaFarge, & Nurick, 2006). Given the inherent need for knowledge exchange in intra-organizational innovation networks, we propose that companies have to learn how to support knowledge exchange across political boundaries with appropriate and customized tools and methods. In doing so, companies can create valuable resources difficult to be imitated by its competitors, which enable them to remain competitive in permanent change of environments.

Previous innovation management research discusses the ability of a few selected innovation practices[1], i.e. collaborative prototyping (Schrage, 2008; Carlile, 2002, 2004), or acting out scenarios (Muller, 2003) to cross political boundaries among heterogeneous actors. However, given the sheer multitude of innovation practices we argue that the time is right for a deeper understanding of which innovation practices and its inherent boundary-crossing mechanisms (Rau, Neyer, & Möslein, 2012) can be successfully applied in intra-organizational innovation networks to overcome political boundaries. Once, organizations are aware of these interrelations, they will be able to build a systematic organizational support system (including for instance distinct types of HR practices, such as trainings or job rotation) to anchor intra-organizational innovation networks in their organization.

To contribute to this discussion, this article focuses on the still understudied link among distinct types of political boundaries and innovation practices and its boundary-crossing mechanisms in intra-organizational innovation networks. In this way, a systematic understanding of boundary-crossing mechanisms allows for the creation of valuable resources difficult to be imitated by competitors. Applying the socio-technical systems theory, we have conducted a qualitative case study between 2009

[1] In line with Benders and Vermeulen (2002), innovation practices are defined as tools, methods, and strategies to support knowledge exchange among different actors.

and 2012 at the sports company adidas. It includes two projects which serve as two embedded units of analysis.

The article is structured as follows: First, the indicated theoretical perspective is presented. Next, an explication of the applied case study approach is delivered. Then, the case is presented, followed by the case analysis which derives three major findings. Finally, we discuss these findings in the light of previous research and end with a brief conclusion summarizing the contribution of this research to theory and practice.

Theoretical background

In intra-organizational innovation networks innovators, who possess a divergent body of knowledge, which results from their past experience and the context within which they act (Hargadon, 2002) are requested to work together. Such existing knowledge can hinder knowledge exchange if sharing would lead to a need to change the knowledge currently held. This change of knowledge generates costs of transformation for the actors involved (Carlile, 2002, 2004; Orlikowski, 2002). Hence, they generate political boundaries to inhibit knowledge exchange (Carlile, 2004). According to Carlile (2004), political boundaries are a major obstacle to knowledge exchange in innovation projects and can be broadly defined as boundaries caused by conflicting interests (Carlile, 2004). These boundaries cannot only be caused by the unwillingness to change previously existing knowledge, but also by socio-related drivers, such as an absence of relationships. Previous research identifies this to give rise to conflict by discouraging the involved actors to reveal their knowledge and expertise (Goussevskaia, Arruda, & Lotfi, 2007; Swan, Goussevskaia, Newell, Robertson, Bresnen, & Obembe, 2007, Jin & Robey, 2008). Also project-related factors, such as time pressure (Barett & Oborn, 2010) and employees' tendency to avoid risk in innovation projects (Janssen, van de Vliert, & West, 2004) can lead to political boundaries. In particular, distinct types of political boundaries can emerge, i.e. 'trajectory boundaries', 'open-closed (minded) boundaries' and 'everybody-is-an-innovator boundaries' (Rau, 2012).

Acknowledging the path-dependent nature of knowledge, knowledge sharing can generate significant costs to the actors involved as it can lead to new knowledge trajectories (Carlile, 2004). For instance, it might be necessary to invest time to acquire new capabilities or transform old capabilities. Existing capabilities might even become obsolete. Further, a deviation from the traditional knowledge trajectory can lead to resistance to share knowledge with the 'trajectory boundary' emerging (Rau, Möslein, Neyer, 2016).

The 'open-closed (minded) boundary' emerges if some actors are open for new approaches (innovators) and ready to change their attitude and work processes accordingly, while others remain in their traditional closed innovation trajectories (traditionalists) (Rau, 2012). If innovators try to share the knowledge gained through new approaches with the traditionalists, traditionalists often do not see the relevance of this knowledge and as a result, inhibit knowledge sharing.

In order to benefit from the innovative potential of the employees outside the established innovation process, companies increasingly start to integrate employees whose primary task is not to come up with innovations (Neyer et al., 2009). This can lead to the emergence of the 'everybody-is-an-innovator boundary' (Rau et al., 2016).

Contrary to the 'open-closed (minded) boundary' the initial attempt to get involved in these innovation approaches is not made by the employees themselves, but by other parties who strive to integrate the knowledge in the innovation projects. If the boundary occurs, employees often question the legitimately of this approach as these tasks are not in line with their job description but are rather perceived to be the task of other departments, most prominently the R&D department. Due to their scarce resources, they prioritize their core task circumventing knowledge sharing.

Table 1 provides an overview of the three types of political boundaries.

Table 1: Types of political boundaries (Rau, 2012)

Boundary types	Characteristics
Trajectory boundary	Emerges if actors are required to gain new knowledge or transform their existing knowledge. This deviation from the traditional knowledge trajectories is perceived to generate significant costs, e.g. actors would have to invest time in acquiring new capabilities.
Open-closed (minded) boundary	Emerges if some actors are open for new approaches (innovators), e.g. open innovation, and change their attitude and work processes accordingly, while others remain in their traditional closed innovation trajectories (traditionalists).
Everybody-is-an-innovator boundary	Emerges, if actors whose primary task is not innovation development are asked by other parties that strive to integrate actors' knowledge, to participate in innovation projects.

The pressing issue is how knowledge exchange can be enabled across these political boundaries. Previous research found innovation practices as a means to enable knowledge exchange across political boundaries. Innovation practices do so with three so-called boundary-crossing mechanisms, i.e. anticipating, reframing and negotiating interests (Rau et al., 2012).

The innovation practice which comprises the boundary-crossing mechanism 'anticipate interests' supports the actors to make sense of how their counterparts make sense of things, i.e. a complex determination known from sensemaking theory (Weick, Sutcliffe, & Obstfeld, 2005). It is suggested that having anticipated the interest of their counterparts, actors might be willing to receive their knowledge. Furthermore, having anticipated their counterparts' interests, actors can adjust their actions to meet their counterparts' interests increasing their willingness to share knowledge. Three types of accessing cues to anticipate interests can be distinguished: the cues that are provided by the counterparts, the actors extract cues based on observation of their counterparts, and the actors collect cues while being put in the counterparts' situation.

By transforming the way actors perceive their interests to be more in line with their counterparts' interests, innovation practices comprising the mechanism 'reframe interests' support actors to overcome political boundaries. This can be done either by challenging assumptions or by internalizing a shared vision. Innovation practices that challenge actors' assumptions are e.g. ethnographical approaches in which another ones situation is directly experienced. Mager and Gais (2009) stress that experiencing

the counterparts' situation can be a deliberate strategy to provoke other perspectives and as a result reframe ones' interests. Furthermore, interests are reframed if actors internalize a shared vision. Gruen, Rauch, Redpath, and Ruettinger, (2002) state that actors in the innovation process often see the world through related lenses, but with different emphases, resulting in problems of interaction. If different interests can be interwoven within a vision framing interests in a congruous way (e.g. within a collectively created story (DeLarge, 2004)), actors are enabled to perceive their interests as similar or complementary.

Innovation practices which comprise the boundary-crossing mechanism ‚negotiate interests' enable actors to express and negotiate their interests towards a consensus. Representations support this process. They motivate actors to provide feedback and provoke discussions. They support the process of negotiation as they can be used to command attention, to demonstrate and to persuade (Brereton & McGarry, 2000; Bechky, 2003b). They become a reference point for actors involved in knowledge sharing (Boujut & Blanco, 2003). By bringing these deliberate cues to actors' minds, sensemaking is directed towards consensus enabling joint action (Gruen et al., 2002). Table 2 provides an overview of these mechanisms.

Table 2: Mechanisms to overcome political boundaries (Rau et al., 2012)

Mechanisms	Means	Characteristic
Anticipate interests	• Counterpart provides cues • Actors extract cues based on observation • Actors collect cues while being put in the counterpart's situation	Actors access cues on which they anticipate their counterparts' interests. It is assumed that based on an understanding of interests, actors might be willing to receive knowledge and/ or adapt their behavior in a way that motivates their counterparts to share their knowledge.
Reframe interests	• Challenge assumptions • Internalize a shared vision	The way actors perceive interests is changed towards a perception which is more congruous with their counterparts' interests.
Negotiate interests	• Representation-based negotiation	Actors negotiate their interests towards a consensus. Representations are available to support actors in expressing their interests.

Yet, it is unclear which mechanism is capable of addressing the particular circumstances at a specific political boundary. Building on the socio-technical systems theory we argue that for successful knowledge exchange across boundaries in intra-organizational innovation networks one has to jointly consider the given social and the technical system. Thereby the situation at a given knowledge boundary constitutes a social system, whereas the innovation practices applied reflects a technical systems. As social and technical subsystems are jointly independent, but at the same time correlative interacting socio-technical systems theory calls for joint optimization (Pasmore, 1982; Trist & Bamforth, 1951; Cherns, 1976). This demanded dual focus is reflected in our research question: "Which boundary-crossing mechanism result in the overcom-

ing of different types of political boundaries in intra-organizational innovation networks?

Method

In the following it is explained why a qualitative case study method is used and how the sampling process is conducted. The second section shows how the data is collected and analyzed.

Research strategy and sampling

To gain an in-depth understanding of the interplay of political boundaries and boundary-crossing mechanisms a case study approach is chosen. The inherent advantage in case study research is that a multitude of perspectives can be gained. Through observation over a long period of time, the researcher can develop an in-depth understanding about the situation, the relationships and, thus, the phenomenon under study.

This study analyses a single qualitative case study with two embedded units of analysis (Eisenhardt, 1989; Yin, 2009). This case was developed during recurrent visits at adidas. The adidas Group is one of the largest companies in the sporting goods industry. According to their corporate mission statement the group *"strives to be the global leader in the sporting goods industry with brands built on a passion for sports and a sporting lifestyle"* (adidas Group, 2010, p. 80).

The case was collected at the adidas headquarters in Herzogenaurach. The focus of this case study is on two projects of Global Athlete Services in Herzogenaurach, i.e. the teams Athlete Services HZO and Athlete Services LACES 2011. The case identified is of particular value because it provided both an historical as well as a present-day window into the interplay of boundary types and innovation practices in intra-organizational innovation networks.

Data collection and analysis

Contact with the Head of Global Athlete Services and an Athlete Services Manager responsible for the service lab was established in June 2009 and regular meetings on the progress of the projects followed from that point. At this stage access to internal documents and presentations had already been provided. Then an "experience prototype" could be observed and a follow-up interview could be conducted to reflect on the proceeding. From June 2009 to December 2011, various forms of data were gathered, ranging from physical service prototypes to board presentations and interviews. Table 3 provides an overview of the types of data obtained.

Table 3: Data sources

List of data sources	
• Interviews	• Ethnographic observations (Workshops)
• Group interviews	• Participant observation
• Company presentations	• Photos, videos, 3D data
• Company documents (e.g. schedules, flowcharts, etc.)	• Physical prototypes

In the period from August 2010 to July 2011, a total of 20 face-to-face interviews were conducted in German and English, lasting between 45 minutes to two hours. To obtain various perspectives on the issues being studied from every department at least two interviewees were included. Table 4 provides an overview of the departments involved in the study and their respective responsibilities.

Table 4: Involved actors in this case study

Department	Primary task of the department
Athlete Services	Responsible for adjusting adidas products to meet sponsored athletes' requirements.
Sports Marketing	Responsible for equipping and activating adidas sponsored athletes.
Promotion Services – Sports Marketing Service Unit	Responsible for export management, includes preparing customs and shipping documents, issuing of invoices, etc.
Business Unit	Responsible for developing concepts for new products, including defining the target market, price structures, etc.
Production	Responsible for the production of made-to-measure (customized) shoes at different levels of complexity.

Given the exploratory design of the study, the first author conducted open-ended semi-structured in-depth interviews (Yin, 2009) with a special focus on narratives to collect deep evidence and to identify relevant new issues, as well as complex behavior and relationships regarding the phenomenon under study (Bryman, Bresnen, Beardworth, & Keil, 1988; Gubrium & Holstein, 1997). All interviews were audio-recorded and transcribed verbatim. Additional information was gathered from official documents, e.g. from the corporate website and annual reports.

A qualitative analysis of interview data, ethnographic observations, and other data was performed to explore the issues raised by the research questions given above. Interview data was coded by one researcher and triangulated with additional data (see Table 3) (Yin, 2009).

Drawing on the socio-technical systems perspective, the first author coded (1) the social system, i.e. types of political boundaries and (2) the technical system, i.e. innovation practices and their boundary-crossing mechanisms. Moreover, to answer the research question, the effects of boundary-crossing mechanisms on boundary types were coded. Coding types of political boundaries, we could not identify a 'trajectory boundary' within this case study. Thus, this boundary type will not be part of the following cross-case analysis and discussion. All elements were summarized in a spreadsheet. This spreadsheet built the basis for a comparative analysis. To ensure the validity of data, only statements which were reported by at least two interview partners were considered in the data analysis. Based on the analysis, a preliminary report was written up in English. Before the presentation of the report, it was sent to each interview

partner to provide the chance to clarify misunderstandings, discard critical statements, and discuss conclusions. The report cannot be made public due to confidentiality issues.

After presenting and discussing the preliminary report with Athlete Services staff, it was recognized that the Sports Marketing department plays a crucial role in the projects' proceeding of the service development in the Athlete Services Lab. Consequently, two additional interviews with Global Sports Marketing managers were conducted to learn more about the Sports Marketing perspective. This resulted in the positive side effect that information on more recent developments could be added.

The case of adidas athlete services[2]

> "'Schäfer delivers a cross into the box. Header, cleared,' commented Herbert Zimmermann, still calmly. But then he saw the ball landing on Herbert Rahn's feet. 'Rahn should take a deep shot, Rahn shoots. Goal, goal, goal!' he shrieked. After a moment of stunned silence he tried to capture the madness of it all. 'Germany lead three to two, five minutes before full-time! Call me mad, call me crazy! '
>
> Zimmermann's voice betrayed his nerves over the next few minutes, willing the whistle to blow. Hundreds of jubilant fans then ran onto the field and scenes of boisterous elation erupted all across Germany. The exhausted players lifted Herberger onto their shoulders. He tugged at Adi Dassler, insisting that the bootmaker should be included in the victory snapshot." (Smit, 2006, p. 50)

Adi Dassler, the founder of the Herzogenaurach-based sports company adidas and confidant of Sepp Herberger, the coach of the West German soccer team introduced a technical innovation – "adjustable studs" – right before the World Cup.

Adi Dassler cultivated relationships with trainers and players alike. For instance, Uwe Seeler was one of the players who were regular guests at Adi Dassler's house, giving him feedback on his products.

In the early days of adidas, Adi Dassler developed his first products in close connection with trainers and athletes. His doing so built the basis of adidas' success, which has lasted until today. With the rise of the sports industry in the late 1970s (Andreff & Szymanski, 2006), the importance of athletes increases, as they are not only integrated as co-creators and feedback providers in product creation processes, but prove to be brand ambassadors for marketing purposes, giving their testimonials on sports products.

At adidas, it is the Sports Marketing department, which is responsible for establishing contact with athletes who will be sponsored by adidas, thereby ensuring that the players wear adidas products. The Sports Marketing department is the primary contact for all athletes sponsored by adidas. Generally speaking, the Athlete Services department is a specialized unit, which supports Sports Marketing.

In the year 2007 the *Athlete Services Lab* was built. The vision of a service lab was to provide a place where Athlete Services members, together with athletes, could adjust products to perfectly fit athletes' needs. All that enhanced with the latest technol-

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2 The description of the early days at adidas is based on the book *Pitch Invasion: Adidas, Puma, and the Making of Modern Sport* by Barbara Smit.

ogy. Showing adidas' technological competences together with individual attention should further strengthen the relationship with top athletes. Thus, Global Athlete Services came to comprise three sections. Another team was set up, to service athletes with state-of-the-art technology in the newly built lab in Herzogenaurach. Further on, we refer to Athlete Services Managers working in Herzogenaurach as AS Managers and to Athlete Services Managers responsible for the service lab as AS Lab Managers.

In order to inform the development of the process in the service lab, existing processes were reviewed. In so doing, the staff of Athlete Services spotted various areas in which they decided to suggest improving their current work processes.

For instance, it was recognized that trusting relationships with top athletes could be a valuable source for competitive advantage. If the relationship with top athletes could be transformed from being transactional to being an interactive co-creating partnership, top athletes could possibly be creative co-designers, insightful feedback providers and proud representatives of jointly developed products, being completely in line with Adi Dassler's heritage.

In sum, a set of projects was defined to improve Athlete Services' work. In every project, various departments worked together to initiate, design and implement a set of innovations. As such, they formed an intra-organizational innovation network with the aim to stimulate knowledge exchange among heterogeneous actors. In each of the projects, innovation practices were applied to support knowledge sharing. Some were consciously applied to cope with pragmatic struggles, some unconsciously. The following case study presents two particular projects, i.e. *Product inline creation process* and *Athlete Services Lab*. These particular projects are selected as units of analysis to study the interplay between boundary-crossing mechanisms and boundary types. The following section describes these in brief.

Project I – Product inline creation process

On a day-to-day basis AS Managers work closely with athletes to figure out how products can be adjusted to meet their needs optimally. Along the way, they gather top athletes' feedback on adidas' products. While athletes as 'heavy users' are able to provide valuable information to enhance inline products, at the beginning information was not used to enhance product creation systematically. Hence, the aim of this project was to develop a process to integrate sponsored athletes' feedback in the design process of adidas' products for the mainstream market.

The Business Unit (BU) is responsible for developing new product concepts. Until recently, AS Managers' feedback was provided rarely (and if so informally) or not at all. Providing feedback to enhance inline products' development process was not considered as an AS Manager's task.

The first attempt to dissolve this boundary was made when a BU employee decided to learn more about the AS Managers' work. He started to accompany the AS Managers to the athletes. About 25 times, he visited different clubs such as FC Bayern or Rosenborg BC Trondheim with the AS Manager. Constructive discussions about new concepts could emerge on the basis of this deeper understanding. Further on, the BU representative tried to integrate both – the AS Manager's interests and searched for ways to frame the projects to meet AS interests. The knowledge exchange between

them ran more smoothly, but between their departments knowledge exchange was still sparse. The development of a product inline creation process that integrated AS Managers was not really in the focus neither of the AS Managers nor of the BU employees. Knowledge exchange seldom occurred. To change this, the senior level managers of the BU and Athlete Services framed AS Managers as the voice of the athletes. They advanced the view that AS Managers' feedback is top athletes' feedback. As a result, AS Managers' engagement increasingly was appreciated. BU representatives as well as AS Managers accounted AS Managers' knowledge as being part and parcel of the product inline creation process.

To build the basis for further integration of Athlete Services, a series of workshops were initiated. In the workshops, AS Managers learned about other departments' working processes, schedules, etc. Employees from several departments reflected that after having a clear picture about the BU's work processes, AS Managers acted in increasingly proactive ways. The other employees perceived them to be more closely connected to the rest of the company.

Finally, these departments worked together to develop a process to integrate the work processes of both departments and design the corresponding interfaces. The AS Managers and the BU representatives discussed ideas about how to integrate athlete input based on timelines, diagrams, etc. supported by these visualizations, the parties were able to argue for their interests and share their knowledge. Finally, a process description for Athlete Services involvement was finished.

Project II – Athlete services lab

In the past, AS Managers visited athletes on the road to measure and prepare adjustments. The AS Managers believed the main benefit of Athlete Services consisted in enabling the athletes to wear optimal-fitting adidas products. The AS Lab Managers took a different stand. They wanted to increase the active involvement of the athlete as a co-creation partner to strengthen the athletes' loyalty to the adidas brand. As also mentioned by Sports Marketing, the goal is to make the athlete feel like they were "part of the adidas family".

It was planned that this will be supplemented with a service at the so-called 'service lab' in Herzogenaurach. At the service lab, Athlete Services employees needed to develop the infrastructure to adjust boots and garments to fit athletes' needs perfectly. Athletes visiting adidas would be measured in the morning and should be able to take their products home at the end of the day. Before the athletes leave, they could test the products and, if necessary, adjustments could be made directly in the service lab. The AS Lab Managers are responsible for developing this service and they are planning to provide the main service in the lab.

The AS Lab Managers promoted the project mainly without the help of AS Managers. But to convince the AS Managers of the service's benefits, the AS Lab Managers' initiated a walk through the service, a so-called 'experience prototype', with an AS Manager. The idea was to let the AS Manager experience the service from the perspective of the athlete. Observing this event, it became clear that it was difficult for the AS Managers to see the service from an athlete's point of view, as the service provider addresses them as AS Managers and as athletes at different times in the process. The

above mentioned approach did not increase their willingness to share knowledge. In addition, the message that the goal of the service was not to improve the existing service, but to provide an additional service with the purpose of gathering data and being able to respond to potential occurrences quickly, could not be conveyed.

Another measure to enable the AS Managers to see the advantage of the Athlete Service Lab was built when the so-called 'microlab' was installed. The 'microlab' is a little space, built within the rooms of the Athlete Services department in which all the necessary tools are integrated to make little adjustment on boots, immediately integrating players' feedback. The AS Managers experienced a part of providing the future service themselves. They regularly made use of the facility.

The general vision about the service could be conveyed, but the detailed proceeding was unclear to most of the actors. Hence, a workshop to act out the service scenario was planned and conducted. AS Managers stated that though they felt integrated in service design they did not feel responsible for the success of the new service. Facing time constraints and other tasks, all AS Managers cancelled their participation in the workshop on short notice.

Nevertheless, the workshop was conducted. AS Lab Managers, the Head of AS as well as external suppliers and university partners participated in the workshop. First, at the beginning of the workshop, a discussion was initiated to clarify which different scenarios of service delivery are possible and which stakeholders would be included in the scenarios. Within the process and after each step discussions took place and notes were taken and kept on a flip-chart. It could be observed that all actors were willing to share their knowledge in this setting. At the beginning of September 2011, when the second workshop took place, already a number of suggestions had been implemented.

In order to cope to stimulate the willingness for knowledge exchange, an AS Lab Managers was asked to make the understanding of the workshop's aim explicit, as well as the understanding of the service delivery. The development needed to be reframed as a joint effort. This made sense because AS Managers, AS Lab Managers and Sports Marketing Managers would deliver the service together. An AS Lab Manager was asked to communicate clearly to the AS Managers that the future process to be followed would be discussed and agreed upon in the workshop. Consequently, the AS Managers' role would also be fixed. The understanding that the service in the service lab is a service belonging to AS Managers and AS Lab Managers as well should be conveyed. Also the date of the workshop was handled quite flexibly and was rearranged to meet the AS Managers' schedule. The AS Managers and the Sports Marketing Manager (SMM) did participate in the workshop.

The task of the workshop was to visualize the optimal process, using LEGO™ bricks. It was agreed to visualize a specific scenario, in which an athlete visits the service lab after being invited due to problems with his footwear. Presumably, this would be the most common scenario. It was agreed that each group had to consist of one AS Lab Manager and one AS Manager. After visualizing the future service, the groups presented their scenarios and participants should mark elements of both groups' models of the service that they would like to integrate in the final service concept. In the

last step of the workshop, the whole group built the final model, visualizing the elements they agreed upon.

Immediately after having formed groups, the participants started building the LEGO™ prototype and discussing the future process. Interestingly and completely contrary to the 'experience prototype' in 2009, all actors openly shared their ideas about the service. As consensus could be reached already at the first stage, participants marked mainly the same elements of the service to be implemented. Finally, the roles and tasks of sub-groups (e.g. the AS Managers) and departments (e.g. Sports Marketing) within this service were defined. Participants' feedback point to the usefulness of the method to enable knowledge sharing and also shows that they appreciated the different perspectives.

Case analysis

Coding political boundaries, boundary-crossing mechanisms, innovation practices and the result of their application as described in the method section, we derive Table 5. It provides an overview of the relations of types of political boundaries and innovation practices applied which could be observed as hindrances for knowledge exchange in the projects. In particular, we found that 'open-closed(minded) boundaries' and 'everybody-is-an-innovator boundaries' existed and have been addressed with distinct innovation practices that comprise the mechanisms 'reframe interests' and 'negotiate interests'.

Table 5: Observed relations between boundary types and innovation practice

Description of the boundary	Innovation practice/ mechanism applied	Result generated
Product inline creation process		
The BU representatives perceive the AS Managers as critics. To gather and provide structured feedback is an additional task for the AS Manager, which comes on top of their previous work. Boundary: 'everybody-is-an-innovator boundary'	To dissolve this boundary, one of the BU representatives decided to accompany the AS Manager on athlete visits. Innovation practice: 'enhanced ethnography' Mechanism: 'reframe interests'	- This BU representative adjusted incorrect assumptions about the AS Manager's work and learned more about their interests. - Change of behavior and way of communicating
Whereas the innovation practice 'enhanced ethnography' was applied by one employee of the BU, the general attitude of the two departments had still to be changed to support and motivate knowledge exchange in general. Still, they had to deal with dissolving the 'everybody-is-an-innovator boundary' Boundary: 'everybody-is-an-innovator boundary'.	The senior level managers of the BU and Athlete Services constantly provoked that athlete's input is crucial to enhance mass markets' products' performance. They advanced the view that AS Managers' feedback is top athletes' feedback. They framed AS Managers as the voice of the athletes. Innovation practice: 'sensegiving' Mechanism: 'reframe interest'	- AS Managers felt increasingly in charge of developing the process to integrate athletes' feedback in the inline product creation process. - Their engagement was legitimized in the eyes of the BU employees. - Progressively their engagement was appreciated
AS Managers and BU representatives still struggled, but due to the 'change	AS Managers and BU representatives met and jointly discuss possible times	- Actors were able to articulate

Description of the boundary	Innovation practice/ mechanism applied	Result generated
in the mind set, both, AS Managers and BU representatives felt in charge of developing the process and thus, were willing to participate in an approach to design a structured process. Boundary: 'everybody-is-an-innovator boundary'	when AS Managers could provide their feedback in the product development process. Innovation practice: 'discussion based on standardized diagram' Mechanism: 'negotiate interest'	their interests - A specific feedback sheet could be developed and time slots for AS Managers' involvement in the product inline creation process could be fixed. -
Athlete Service Lab AS Managers see the main objective in supplying shoes (traditional view). In contrast, AS Lab Managers stressed more the athletes' active involvement as co-creation partners to strengthen athletes' loyalty to the adidas brand. At the beginning, the AS Managers challenged the idea, while AS Lab Managers pursued the idea in a solo attempt. Boundary: 'open-closed (minded) boundary'	To dissolve this boundary, one of the AS Lab Managers involved an AS Manager as 'test athlete' in an early prototypical service experience to try to reveal the benefits of the new service. Innovation practice: 'experience prototype' Mechanism: 'negotiate interest'	- During the service delivery it remained unclear in which part the AS Manager was asked as an expert and which parts was simulated. - The message that the goal was not to provide superior products but another level of service experience could not be transferred convincingly. AS Lab Managers' picture of the positive features of the service could not be communicated.
Boundary: 'open-closed (minded) boundary' (see above)	Management emphasized a perspective according to which the major goal of the service was not to improve the existing service, but to provide an additional service with the purpose of gathering data and being able to respond to potential occurrences quickly. Innovation practice: 'sensegiving' Mechanism: 'reframe interest'	- AS Managers changed their perspective. Increasingly, they mentioned similar benefits of the service as brought forward by the management earlier. - They started to share their unique knowledge about the athletes to enhance service development.
Boundary: 'open-closed (minded) boundary' (see above)	A prototype of the tools available in the lab to make minor adjustments on the spot was built and made available for AS Managers to use. Innovation practice: 'sensegiving' Mechanism: 'reframe interest'	(See above)
	A prototype of the tools available in the lab to make minor adjustments on the spot was built and made available for AS Managers to use. Innovation practice: 'act out scenarios' Mechanism: 'reframe interest' & 'negotiate interests'	- The boundary between AS Lab Managers and AS Managers could not be dissolved at this point in the project, because the actors did not participate in the workshop.
The fact that all AS Managers can-		

Description of the boundary	Innovation practice/ mechanism applied	Result generated
celled the workshop on short notice points to the existence of a boundary which could not be dissolved with this innovation practice, the *"everybody-is-an-innovator boundary"*. Given that AS Managers' primary task is to serve athletes on the road, their focus is not the design of new services. Because of the time constraints faced, knowledge exchange in this regards is difficult. Boundary: 'everybody-is-an-innovator boundary'		
Boundary: 'everybody-is-an-innovator boundary' (see above)	- A workshop is scheduled to jointly built and simulate the service. - To motivate AS Managers to participate in the workshop, the necessity of their participating and also their benefits of doing so was stressed. Innovation practice: 'sensegiving' Mechanism: 'reframe interest' The task of the workshop was to visualize the optimal process, using LEGO™ bricks in two interdisciplinary groups. Innovation practice: 'collaborative prototyping' Mechanism: 'negotiate interests'	- All invited actors participated in the workshop and actively engaged in developing the service prototype. - Different standpoints were made explicit and were negotiated. - A consensus of a shared service model could be built.

More specifically, comparing the combinations of types of political boundaries and boundary-crossing mechanisms, we found that:

1. to overcome the 'open-closed (minded) boundary), the boundary-crossing mechanism 'reframe interests' is needed (as found in the Athlete Service lab project).
2. to overcome the 'everybody-is-an-innovator boundary' first the boundary-crossing mechanism 'reframe interests', then the boundary-crossing mechanism 'negotiate interests' is needed (as found in the Athlete Service lab project & Product inline creation process project).

This means that at both types of political boundaries an innovation practice comprising the boundary-crossing mechanism 'reframe interests' was the first step to overcome a political boundary. These combinations of boundary types and boundary-crossing mechanisms were not successfully in all reported situations. Thus, we did a deeper examination of those situations. This revealed more insights about the nature of knowledge exchange, especially in regards to how innovation practices comprising the boundary-crossing mechanism 'reframe interests' should be implemented.

First, at the 'open-closed (minded) boundary' the mechanisms 'reframe interest' failed once, but succeeded twice in supporting knowledge exchange (Athlete Service Lab project). Revisiting this project, we found that even though the innovation practice comprises the mechanism 'reframe interests' due to the way the innovation practice was executed, actors could not overcome the political boundary. Our analysis revealed that the mechanism 'reframe interests' is only successful if the actors are supported in bracketing[3] specific events in a way that leads to a change in perspective and finally a different interpretation of the situation. This is exemplified in the following example.

When the innovation practice 'experience prototype' comprising the boundary-crossing mechanism 'reframe interests' was applied by the AS Lab Managers, AS Managers who were confronted with the prototype were not supported in bracketing events. Using the 'experience prototype' AS Lab Managers strive to show the planned service from another perspective. They wanted the AS Managers to see the service from a new perspective, the perspective of the top athlete, to stimulate them to reframe their interests. Therefore, the service was simulated with the AS Manager in the role of the athlete. The way it was executed though, did not enable this change of perspective. As AS Managers where not clear about their role at the specific moment – AS Manager or athlete. The difficulties in making this role distinction meant that bracketing the elements of the real service was not possible. They were not able to bracket the information they received to a consistent and convincing idea of the future service. As a result, the boundary-crossing mechanisms 'reframe interests' was not successful.

Second, the case analysis also pointed to the influence of identity (self-understanding) hindering or supporting the boundary-crossing mechanism 'reframe interests'. We found that the boundary-crossing mechanism 'reframe interests' will only be successful if the perception to be conveyed is in harmony with a positive identity of the actors. This will be exemplified in the following example taken from the Athletes Service Lab project.

Early in the Athletes Service Lab we found that actors are only able to reframe their interests, if the newly assigned interpretation of the innovation project is in congruence with a positive idea of the own identity. At the beginning of this project, the innovation practice 'experience prototype' could not reframe the AS Managers' perspectives in a way that harmonizes with their personal identity of being the ones who provide athletes with best fitting boots. The way AS Managers might have understood the service made it contrary to their identity. Thus, it provoked resistance and AS Managers' attitude did not change due to the 'experience prototype'. Subsequently, the boundary-crossing mechanism of 'reframing interest' inherent in the innovation practice 'experience prototype' was not successful. Even though the innovation practice comprised the mechanism 'reframe interests', it did not succeed in reframing interests

[3] Bracketing has to be understood in relation to Karl Weick's sensemaking process (Weick, Sutcliff & Obstfeld, 2005). Weick et al. (2005) argue that individuals' sensemaking process includes the step of bracketing perceived information from the environment into meaningful units. Based on these units individuals interpret their environments.

and thus, did not overcome the political boundary. After AS Managers' perception of identity has changed, they started supporting service development.

Third, analyzing the processes when innovation practices are applied comprising the boundary-crossing mechanism 'reframe interests', we found that innovation practices comprising the boundary-crossing mechanism 'reframe interest' that reduce ambiguity about the future are in particular effective in supporting knowledge exchange. This is exemplified in the following example taken from Athletes Service lab project.

The innovation practices within those comprising the boundary-crossing mechanism 'reframe interests' which reduce actors' ambiguity about their future tasks and roles in the organization seem to be very effective. If actors are unsecure how the output of the intra-organizational innovation network will affect themselves, their resistance might be provoked. Innovation practices which draw a picture of the future and visualize the positive developments for each single participant are very effective in enabling a change of perspective. At adidas, for instance, the 'micro lab' being an example of the innovation practice 'experience prototype', fulfilled this demand. The tangible prototype of the service lab reduced ambiguity about the future. It enabled the AS Managers to adjust their individual sensemaking about the benefits of the service.

Discussion

As a result of this case study, we are able to provide six lessons on how innovation practices (and its corresponding boundary-crossing mechanisms) can be successfully applied in intra-organizational innovation networks to overcome political boundaries. In doing so, we enable both, research and practice, to gain a deeper understanding of the complex relation among distinct types of innovation practices as well as how they support to overcome political boundaries. This understanding enables organizations to create and implement a valuable knowledge resource difficult to be imitated by its competitors.

Our findings stress the importance of innovation practices comprising the boundary-crossing mechanism 'reframe interests'. In particular, our *first lesson* is that the use of an innovation practice comprising this mechanism is sufficient to overcome the 'open-closed(minded) boundary'. Our *second lesson* is that this mechanism is the first step towards overcoming the 'everybody-is-an-innovator boundary'. The important role of the boundary-crossing mechanism 'reframe interests' is in line with previous research on organizational theory which finds the important role of sensemaking in situations of change (literature review by sensemaking in crisis and change by Maitlis & Sonenshein, 2010). In situations of change actors face ambiguity and confusion (ibid) which might be threatening and can cause feelings of fear and anxiety (Ashford, 1988; Weick, 1993), circumstances typically triggering sensemaking processes. When innovation practices comprising the boundary-crossing mechanism 'reframe interests' are applied a change of perspective might is initiated based on a sensemaking process. Thus, our *third lesson* is that innovation practices, comprising the boundary-crossing mechanism 'reframe interests' are in particular useful, if they support the phase of bracketing in the sensemaking process. Our *fourth lesson* is that the boundary-crossing mechanism 'reframe interests' will only be successful if the perception to be

conveyed is in harmony with a positive identity of the actors is also supported drawing on the sensemaking theory. Weick, Sutcliff, and Obstfeld, (2005) find that sensemaking is an iterative process. Whether or not an individual retains an interpretation of a situation is heavily influenced by the fact if the assigned interpretation is congruent with an actors' perceived own identity (ibid). When intra-organizational innovation networks work towards a change for the actors involved (e.g. changing roles and tasks), organizational actors' self-identity can be subject to change. For instance, how Athlete Services Managers changed their self-identity, as they started to see themselves as legitimate part of the innovation process is reported in the project Product inline creation process. Weick et al. (2005) argue that from the perspective of sensemaking, organizational actors' perception of self-identity shapes enactment and interpretation. This again influences outsiders image of the actor and subsequently how the actor is treated, leading to stabilizing or destabilizing the actors' identity (ibid). Evidence supporting these findings in the context of intra-organizational innovation networks can be found in this case. First, the innovation practice 'sensegiving' influenced Athlete Services Managers identity-construction at newly emerging interface in a way that knowledge exchange is enabled. Second, the changing self-identity is reflected in Business Units employees' reaction towards Athlete Services Managers. And third, Athlete Services Managers communicate their new perception to others outside the project.

Our *fifth lesson* is that that innovation practices which reduce ambiguity about the future are in particular effective to enable knowledge exchange by overcoming political boundaries. Given that previous research found that actors being confronted with uncertainty react with a passive 'wait-and-see posture' (Day & Shoemaker, 2000) and finding that uncertainty is a trigger for the 'everybody-is-an-innovator boundary' it is reasonable that reducing uncertainty supports actors to overcome this boundary.

Referring back to our *second lesson*, we emphasize that applying an innovation practice comprising the boundary-crossing mechanism 'reframe interest' is not enough at the 'everybody-is-an-innovator boundary'. Our *sixth lesson* is that additional innovation practices which enable the involved actors to negotiate their interests are needed. Thereby, we see links to previous research in the field of boundary objects to overcome political boundaries. Earlier it was shown that boundary objects can facilitate a process of joint negotiation (Carlile, 2004; Holzer, Wolf, & Kocher, 2011; Star & Griesemer, 1999), but also that they can hinder knowledge exchange, e.g. by reinforce existing power structures or occupational hierarchies (Oswick & Robertson, 2009). We also see that the use of innovation practice to facilitate the negotiation of interests (often including boundary objects) does not work on every political boundary.

Based on our findings, we propose that whether the approach to negotiate does work or not depends on the type of political boundary it strives to overcome and whether it is applied in combination with an innovation practice comprising the boundary-crossing mechanism 'reframe interests'.

The findings from our case study lead us to a set of interesting approaches for future research. The relevance of sensemaking connected to self-identity is found to be crucial for knowledge exchange at political boundaries. Thus, we argue that further research is needed to explore the role of actors' self-identity throughout the sensemaking processes. Also, there is a need for a deeper understanding how these processes

can be supported from an organizational perspective, i.e. what role HR practices might play in this regard. Searle & Ball (2003) argue that especially case studies are needed which examine employee behavior in innovation projects to inform an integrated HR practice. Whilst up to now, in HR practice there is an over-reliance on individual focused procedures (Searle & Ball, 2003), this case points to the importance of an integrated HR practice. We argue that employees, especially those engaged in intra-organizational innovation networks, need to be supported in their approaches to dissolve knowledge boundaries. Thus, a future area of research might be how boundary management in intra-organizational innovation networks can be integrated in structured integrated HR practices. For instance, extensive training is found to predict organizational innovation (Shipton, West, Dawson, Birdi, Patterson, & Group, 2006). Given that typical HR 'systems' encompasses trainings, which ensure that employees gain the basic skills to perform their task effectively (Keep, 1999), we propose to include boundary management elements in trainings.

While our research is only a first step in this direction providing insights which mechanisms for overcoming specific boundary types should be chosen, we encourage further research on the issue which particular innovation practices from within the group of each mechanism are suitable depending e.g. internal and external contingencies an intra-organizational innovation networks is confronted with. Thereby, organizations could be enabled to develop an innovation-specific competency of reducing knowledge boundaries and hence, reducing development time, which might lead to a significant competitive advantage time.

The strengths of this study must be tempered with recognition of its limitations. One consideration is that the data set consists of one single case study in a specific industry. It is possible that combinations of types of political boundaries and mechanism to overcome them identified here may not be exhaustive, as only a limited set of boundary types and applied innovation practices could be observed and analyzed. Obviously, a single case within an organization with a given organizational structure cannot offer an exhaustive perspective of all possible interplays between boundary types and boundary-crossing mechanisms. For the current study, however, we argue that the method used was fitting. First, the limitation of a single-case study is compensated for to some degree by examining and comparing more than one unit of analysis and source of data. Second, the goal of this study was to capture depth of understanding rather than breadth at this explorative phase. In case study research generalization is gained in terms of generalizing findings to theory rather than to a large population (Eisenhardt, 1989; Yin, 2009). A further limitation here concerns the correlation of boundary types and boundary-crossing mechanisms. Because of the multiple innovation practices that were applied at some boundaries in the projects under study, a 1:1 relationship of interplays between boundary types and boundary-crossing mechanisms cannot always be made. Future research might address this limitation by complementing the rich insights from real-world projects with research under precisely controlled conditions, e.g. laboratory experiments.

The accusation of subjectivity in interpreting the case must be taken seriously. Even though this accusation cannot be refuted completely, we argue that the case was

developed during three years, in which the first author challenged assumptions, understandings and interpretations with various actors within and outside of adidas.

Conclusion

The case of adidas Athlete Services provides in-depth insights in innovation projects at one of the leading German companies. adidas Athlete Services was keen to participate in this study, to learn more about how to improve knowledge exchange among different groups in their organization. adidas' willingness to openly reveal the progress of the innovation projects with all its successes, but also its set-backs enabled research on political boundaries in intra-organizational innovation networks based on a very rich data set. We find two particular combinations of boundaries and boundary-crossing mechanisms in order to overcome political boundaries in the intra-organizational innovation network. Moreover, our findings point to the immense importance of reframing activities in the context of intra-organizational innovation networks. In so doing, our research also serves a practical end, providing new insights into how actors in intra-organizational innovation networks should choose innovation practices in order to dissolve the political boundaries with which they are confronted in their daily work. The experiences of adidas suggest that innovation practices and their boundary-crossing mechanisms are important enablers or barriers to overcome political boundaries in intra-organizational innovation networks. A systematic understanding of this relation will enable organizations to create a competitive advantage by implementing a knowledge resource difficult to be imitated by its competitors. Thus, the time is right for a more systematic linkage of innovation practices with other organizational practices (such as HR practices) to foster knowledge exchange in intra-organizational innovation networks.

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