Making Use of Innovation Spaces: Towards a Framework of Strategizing Spatial Interventions

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Abstract This chapter explores the use of space as a means of effectively fostering creativity and innovation in organizations more specifically, so-called spatial interventions. Spatial interventions refer to the strategic scope of actions that can be undertaken when and while using innovation spaces. We approach the topic of spatial interventions from different perspectives and shed light on crucial aspects of how innovation spaces can be used as a 'silent coach.' This approach takes into consideration the conceptual interplay of the strategic discourse, theoretical accounts of coaching practice and the process of using innovation spaces. We further introduce a framework for spatial interventions that helps to structure and analyze the use of space during a workshop. Finally, based on findings from a case study that was conducted in the newly created innovation space of a large company, we apply and expand this theoretical framework. The approaches and findings of this chapter support both strategists and practitioners and contribute to a deeper understanding of how to make use of space as a strategic tool.

1 Introduction

Designing effective workspaces for innovations in organizations is becoming the strategic focus of many organizational efforts. Several companies acknowledge the power that workplace design can exert on the way people think, behave, and interact. Thus, a lot of strategic efforts are undertaken to innovate space design. Even though the strategic intent is clear and the strategy is clearly articulated with regard to fostering and supporting efficiency, effectiveness, empowerment of innovation teamwork, development of new business designs as well as the expression of the organization's innovation values, research only provides very vague answers on how this strategy should be practiced in innovation spaces (Groves and Marlow 2016; Moultrie et al.

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2007). We want to close this research gap by focusing on the actors' level and therefore the process of using innovation spaces. Innovation spaces are produced by its users interacting with the place and interacting among each other in the place. When focusing on the actors' level of innovation practitioners, we need to better understand what shapes the usage of micro-structures and structural elements within the innovation space, thus, the interactional patterns of place making. The question of "what to make use of" is connected with the question of "how to make use of."

This chapter outlines a framework for spatial interventions to be used by both strategists and practitioners in regard to understanding how the physical environment can be used in the wider context of organizational innovation, innovation capacity building, and creativity. Thus, the aim of this chapter is twofold. First, we want to provide the conceptual interplay between strategic intent and the use of innovation spaces. And second, we want to further delineate the strategic scope of actions that can be undertaken when using innovation spaces—so-called spatial interventions.

The structure of this chapter is as follows: in Sects. 2 and 2.2 we provide an understanding of our strategic approach and clarify our definition of strategy-as-practice for innovation spaces in use. We will focus on the interplay of people and interactions and clarify how tangible and intangible microstructures can be actively used as tools. In Sect. 3, we further introduce our conceptual framework of spatial interventions. This framework helps us to systematize the scope for actions and their effect on outcomes of innovation processes. Section 4 describes how these spatial interventions are used in a real setting by presenting results and findings from a case study. We close the chapter with a discussion in Sect. 5.

2 Innovation Spaces in Use: How Spaces Facilitate Organizational Innovation

2.1 The Concept of Strategy for Innovation Spaces: From Intended Strategy to Strategy-as-Practice

A lot of companies employ the strategy of innovation capacity building which is defined as designing appropriate organizational structures and processes, and thus implementing new business practices and workplace organization (Armbruster et al. 2008; Camisón and Villar-López 2014). Significantly changed organizational structures that will foster the implementation of advanced innovation policies, processes, and procedures based on deliberate strategic decision-making can be easily made visible by creating new tangible structures (OECD 2005). One such tangible structure can be an innovation space which companies implement as part of their innovation capacity-building activities. Accordingly, Moultrie et al. (2007) have pointed out that a clearly articulated innovation strategy in line with the intended design of dedicated innovation environments, physical workplaces and structures helps to understand *why* an organization wants to develop specific capabilities for enabling innovation. In

Fig. 1 Types of Strategies, based on Mintzberg and Waters (1985), own illustration

the following, we want to deepen the understanding of such innovation spaces as strategic tools and embed the use of space and spatial interventions within the strategic discourse.

Strategies in an organization form in different ways. Following Mintzberg and Waters (1985), a strategy can be considered as a continuum with two extremes—intended and realized strategies. While an intended strategy refers to leaders defining a strategy and thereby stating what the organization *should do*, the realized strategy focuses on what the organization actually *did*. Moultrie et al. (2007) build on this distinction by the notion of a "strategic intent" which is formed into a "realized intent" in the context of innovation spaces. The term they use, however, does not equal the more motivational idea behind strategic intent, as defined by Hamel and Prahalad (1989).

Building on the comparison of the intention and the realization of a strategy, two further types of strategies can be distinguished, deliberate and emergent strategies. Figure 1 summarizes the different types of strategy. A strategy is called deliberate if the strategy is realized as intended. Such a perfectly deliberate strategy requires three conditions to be met. The first two conditions refer to the intention of the strategy which, first, must be "articulated in a relatively concrete level of detail" and thereby leave no doubt about what is desired (Mintzberg and Waters 1985, p. 285). Second, because organizational innovation means collective action-taking, the intentions must be common for all actors (i.e., they must be "either shared as their own or else accepted from leaders") (ibid.). Third, the realization of the intended strategy must not be endangered by external forces, such as market or technology. In contrast to such a deliberate strategy, a strategy is called emergent if there is "consistency in action over time—in the absence of intention about it" (ibid.) The focus shifts from (intended) strategy, something an organization has, to something its organizational members do. In regard to the provision of a new workplace environment, its need to support different ways of thinking (divergent and convergent thinking) as well as different work modes of the innovation process (seeking inspirations, finding focus, creating ideas, developing prototypes and iterations) is crucial (Moultrie et al. 2007; Schwemmle et al. 2017). Consequently, even a delineated space strategy with the intent to enable and support innovation processes in a new manner needs to provide room for emergent elements.

The distinction between intended and emergent strategies is also reflected by the concept of strategy-as-practice, as introduced by Whittington (1996, 2003, 2006) which focuses on *how* a strategy emerges informally from managerial activities. In

addition, Jarzabkowski et al. (2007, p. 7) distinguish between strategy and strategizing. They define strategy as "conceptualized as a situated, socially accomplished activity, while strategizing comprises those actions, interactions and negotiations of multiple actors and the situated practices that they draw upon in accomplishing that activity." Thus, the concept of strategizing helps us to shape the process of using innovation spaces designed to support and foster innovation development, teamwork, as well as creativity and design (Moultrie et al. 2007).

2.2 *Strategy-as-Practice: Making Use of Microstructures in Innovation Spaces*

Activities that are connected with the strategy of innovation capacity building within an organization encompass a variety of social activities. Therefore, we want to focus on the social activities that can be carried out in organizational innovation spaces (Whittington 2006). Setting up innovation spaces as a strategy creates a supporting environment to foster teamwork, innovation, creativity, and design on the micro-level (Moultrie et al. 2007). This level of structural organizational innovation that influences responsibilities, information flows, and cross-functional exchange on a macro-level has to be aligned with the level of procedural organizational innovation that effects activities, routines and practices (Armbruster et al. 2008). The strategy-as-practice approach, as introduced above, links the micro- and macro-perspectives on strategy as a social practice and enables us to better understand both micro-phenomena and the use of structural elements in their wider strategic and organizational context (Jarzabkowski et al. 2007).

Lipmanowicz and McCandeless (2014) have highlighted the power of making active use of microstructures and structural elements in shaping and guiding how groups interact and work together. They distinguish between tangible and intangible microstructures and structural elements (see Table 1). Tangible microstructures are defined as the physical spaces where innovation teamwork takes place and the tangible structural elements. These include tables, chairs, and resources that refer to all choices about how a space is arranged. This space can either contribute to or contradict the strategic intent. For example, the invitation to actively participate does not work well if none of the structural elements in the innovation space are allowed to be re-arranged by its users/participants.

However an approach to systematizing the repertoire of actions, tools and techniques, and of how to design the use of space in an intentional manner is still lacking. Also, the liberating structures that summarize potential actions that identify triggers to productive practices establish new patterns of behavioral habits suggest an "activity composing" approach based on the analysis of a specific innovation challenge (ibid., p. 86). In line with Simon Sinek's Golden circle (2011) and De Certeau (1984), we would like to shift the conceptual discussion from the why of innovation capacity

Table 1 Hierarchy and examples of microstructures and structural elements (Lipmanowicz and McCandeless 2014, p. 11)

	Tangible structures	Intangible structures
Micro-structures	Boardroom	Presentation/lecture
	Classroom	Managed discussion
	Meeting room	Status report
	Restaurant	Open discussion
	Office	Brainstorm
	Water cooler	Liberating structures
Structural elements	Large round table	Purpose/agenda
	Large rectangular table	Question
	Small table	Theme
	Chair	Seating arrangement
	Flip chart	Group configuration
	Post-its	Time allocation
	Projector	Standing instead of sitting
	Screen	Formal or informal

building as a strategy to the what and how of strategy-as-practice for innovation spaces in use. We will therefore address the following questions:

- What are the tools and techniques of strategizing the innovation spaces to be used?
- How can the tools and techniques of strategizing innovation spaces be used in practice?

In the following, we want to develop a framework of spatial interventions that will help innovation practitioners to make better informed decisions about what is, could or should be their repertoire of microstructures and the arrangement of structural elements when working in innovation spaces. We will also illustrate how tools and techniques of strategizing innovation spaces can be used and will share some findings about a case study that we conducted in a corporate environment where the company started to use a newly created innovation space.

3 Liberating Innovation Capacities: The Relational Concept of Place

3.1 Praxis, Practices, and Practitioners of Innovation Spaces

To systematize tools and techniques for the process of using innovation spaces, we will shed light on the interplay of people, spatial structures, and organizational context (Schwemmle et al. 2017; Klooker et al. 2016). The concept of strategizing to define the process of using innovation spaces sets the focus on people who—intentionally or

unintentionally—*do* something and thus on the relational interplay between people and actions. Whittington (2006) proposes three elements as the nexus of strategizing: praxis, practices, and practitioners. Praxis is consequential for the strategic intent. It is considered as "all the various activities involved in the deliberate formulation and implementation of strategy" (ibid., p. 619). Practices refer to all shared routines and rituals of behavior, including procedures for thinking, acting and using things. Practitioners "are strategy's actors, the strategists who both perform this activity and carry its practices" or, in other words, "the actors who shape the construction of practice through *who* they are, *how* they act, and *what* resources they draw upon" (Jarzabkowski et al. 2007, p. 11). Since this chapter aims at understanding the role of spatial interventions that are obviously initiated by people, we, in the following, will focus on practitioners as the actors of strategy.

We consider activities, workshops, and innovation project teams working in an innovation space as being a series of spatial interventions over time. This definition entails seeing the environment as an educator, as a third coach/teacher (cf. Strong-Wilson and Ellis 2007). Our definition of the spatial concept and what and how to make use of, it is a relational one. In this context, space is defined as the relation between objects and their environment, objects and objects, people and objects as well as between people and people. We define spatial interventions as the strategic scope of actions that can be undertaken when and while using innovation spaces and consider them as structural and procedural at the same time (Lefebvre 1974; Löw 2001). Structural interventions include changing the relationships between these elements (e.g., moving a table or taking a team outside). Procedural interventions include changes of work processes, procedures and routines that people display while interacting with each other in the environment (e.g., using the starfish method and lying on the ground instead of standing in front of a whiteboard while ideating). The differentiation between structural and procedural interventions is somewhat blurred because both intervention types represent two sides of one coin: Moving the set-up of furniture in the space (e.g., unifying different team spaces to one big space for sharing results or ideas) changes the structure and at the same time includes the procedural component of asking people to transform the space so that it is easier to share with the other team. Thus, the way we use space as a concept is not only simply a matter of distance; whatever we do to position ourselves in the space and as we move around will result in meaning-making and communication (Strong-Wilson and Ellis 2007; Lawson 2001) which might also lead to misinterpretation. The structural intervention of getting rid of furniture (tables and chairs) to let "creativity freely flow" can be interpreted as depriving the team of its resources. The procedural intervention of a coach who says, "now let go and think without any constraints about radical ideas," without distancing himself from the team, can be interpreted as mistrusting the team to work on its own, even though this intervention was meant to give the team freedom to explore.

3.2 Make Use of Innovation Spaces

Finally, we want to address the question of how innovation practitioners can make use of the relational concept of space. Once an innovation space is set up, the place has been defined for an intended use by its planners, designers, and strategists. In line with this notion, the place becomes a locus of strategy. Strategy postulates a place that can be delimited as its own. Thus, the place postulates specific intentional use and thereby speaks to its users. Based on our previous study of a variety of innovation spaces during their process of creation and initial use, we were able to identify three core levels of structural interactions and speech-acts (Klooker et al. 2016). We differentiate between, first, spatial structures that provide resources such as materials, tools, education, time and space. Second, spatial structures that facilitate different work modes and interaction patterns according to the task(s) of the team (e.g. mobile high tables and whiteboard, human facilitators and process-orientation such as Design Thinking). Third, spatial structures that communicate the intention of the space such as the organization's motivation to foster teamwork and creativity (e.g. a rough and unfinished look and feel promotes doing, highlighting teamwork through displayed principles of team speak in the space).

These are also key qualities used to describe the qualities of team leadership coaches (Wageman et al. 2008; Hawkins 2013): A coach supports and helps the team to structure its way of thinking and working, and initiates a performative collaboration among the team members. Hackman and Wageman (2005, p. 269) define team coaching as "direct interaction with a team intended to help members make coordinated and task-appropriate use of their collective resources in accomplishing the team's work." To be more precise, team leadership coaching is about the development of team members capabilities to attain higher levels of accomplishments with regard to team innovation (DeRue et al. 2010; Rousseau et al. 2013). A team leadership coach sets, adapts, and changes the conditions of team work. Using the collective resources well, strengthening the team's functioning, and helping to shape the performance by leveraging existing knowledge and skills corresponds to the qualities of an innovation place being a communicator (motivational level), facilitator (consultative level), and provider (educational level) (Hackman 2002; Klooker et al. 2016). In essence, we therefore consider the space as a "silent" coach (neither a "silent" team member nor a "silent" leader), because the key characteristics of making use of microstructures in innovation spaces correspond to the qualities of team leadership coaching.

4 Spatial Interventions in Innovation Workshops

4.1 Roles of a Coach and Characteristics of a Situation: Theoretical Foundations

Following the notion of the space being a silent coach during a workshop, we shed light on two important and related theoretical foundations, First, we seek to understand the function a coach has to fulfil (over time) before and during a workshop. Second, we provide a better understanding of the workshop as a situation where coaching and thus spatial interventions take place. We then combine these two theoretical foundations—coach functions and characteristics of a situation—to develop our own framework for spatial interventions. As mentioned previously, we consider activities, workshops, and innovation project teams working in an innovation space as being a series of spatial interventions over time. A spatial intervention is defined as an activity that changes the structures and/or processes in a space and thereby de-routinizes the space (Sutherland 2013).

According to Hackman and Wageman (2005, p. 273), coaching functions "are those interventions that inhibit process losses and foster process gains." They propose three performance processes of a team and accordingly three functions of coaching which we—inspired by Simon Sinek (2011)—summarize as the Why, How, and What of coaching. These three dimensions of coaching also follow the competences of a group facilitator suggested by Stewart (2006) and are summarized in Table 2.

1. The *motivational* level of coaching minimizes free riding and builds shared commitment. It thereby supports the performance process of effort and addresses the question of what motivates the team, i.e., *why* it works together.
2. The *consultative* level of coaching aims at minimizing mindless adoption of performance routines and guiding next steps along the task requirements. Consultative coaching supports the performance strategies of a group and thus answers the question of *how* the team works.
3. The *educational* level of coaching is aimed at building the knowledge and skills of a team and thus balancing the contributions of team members. Therefore, educational coaching refers to the learned content, or: the *what*.

This threefold distinction of coaching roles corresponds to the three functional dimensions of an innovation space as communicator, facilitator and provider (Klooker et al. 2016). As a coach, a space therefore takes the following roles:

Table 2 Coaching roles (Hackman and Wageman 2005)

Coaching role		Aims at
Why	Motivational	Effort, commitment
How	Consultative	Performance strategies
What	Educational	Knowledge, skills

1. The space can motivate team members and the team dynamics (motivational communicator). For instance, changing positions or moving to other spaces for new work modes during the workshop can energize a team. Further, the spatial set-up (around a table, next to a whiteboard, ...) can foster the team experience. In addition, the creation of a retreat space, which is a bit separated from other teams, allows a team to work without distractions and to focus, as well as to foster a sense of unity. In a similar way, a space can support the performance of single team members. A safe environment encourages them to think and act freely and creatively and thereby increase their motivation.
2. The space can further facilitate the workshop process (consultative facilitator). On a basic level, the space needs to provide all furniture and material necessary to run the workshop. On a more advanced level, the space can support different phases of a workshop. For instance, during a diverging phase where new ideas are generated, a light and inspiring surrounding might help, whereas a converging phase needs a more reduced place that enables focusing and concentration. If prototyping is included, the material which is provided can also inspire participants or lead them to using certain materials or a certain technology.
3. Lastly, the space can also take the role of an educator and knowledge provider (educational provider). First, it may provide information on the process or workshop agenda (e.g., through charts on the wall or elsewhere in the space). Second, it can be used to set a challenge-related workshop atmosphere. For instance, a space hosting a workshop in the field of vacation can have deck chairs, umbrellas, maps, and pictures to put the participants in the right mood.

We next elaborate on the situation and its characteristics. According to Belk (1975, p. 157), a situation "comprises a point in time and space" and works as a stimulus influencing a person (organism) and evoking a behavioral response. He differentiates the following five characteristics of a situation:

1. the physical surroundings of a person,
2. the social surroundings of a person, including other people and their characteristics and roles,
3. the temporal perspective, such as time since or to another event or situation,
4. the task definition underlying the situation,
5. and the antecedent states, such as momentary moods and momentary conditions a person brings into the situation.

Considering the space as a coach, these five characteristics of a situation can provide the following five insights to spatial intervention, which will also be discussed in more detail in the next section.

Physical Surroundings The space of a workshop should not only be considered as one big space, but rather as spaces within a space. That means, every team—and maybe even every team member—defines its own team space within the space and develops feelings of ownership during the workshop (Pierce and Jussila 2010).

Social Surroundings The spatial setup not only hosts a process and several teams, but also influences the team dynamics and thus the interaction within a team. For instance, the position of people at a table conveys their status within the group. Further, small spaces might force a more active interaction between team members.

Temporal Perspective In terms of a workshop, there are two levels of a temporal view on space. First, there is a before and a during the workshop (i.e. somebody can prepare the space in a specific way before the participants enter or the space can be changed together with them during a workshop). Second, it refers to the life cycle of the workshop and the team. For instance, team processes follow the phases of forming, storming, norming, performing, and each phase has other requirements that a space can reflect (Tuckman 1965).

Task Definition The task definition of a workshop refers to its purpose and the specific challenge. As explained above, the space can create an atmosphere that fits to the context of the challenge.

Antecedent States During a workshop, a coach has to consider the momentary moods of the team and can use the space and spatial interventions to react to them. For instance, a team lacking energy might be energized by going outside; a team having no new ideas might move to another space to be inspired.

Having introduced the theoretical foundations of coaching functions and characteristics of a situation, we now link both to create a framework of spatial interventions.

4.2 A Framework for Spatial Interventions

We organize our framework for spatial interventions along four dimensions: (1) Time, (2) Reference Object, (3) Initiator, and (4) Type and we now explain them in more detail.

The *Time Dimension* of a spatial intervention answers the question of when the interaction takes place. This can either happen before or during the workshop. An intervention done before a workshop creates an atmosphere for participants when they enter the room. This could either trigger a new mindset and work-mode through a set-up which looks totally different from the meeting rooms participants know. Or it could direct participants to the content of the challenge. For instance, participants of a workshop aiming at future developments could be framed as time travelers. They receive a ticket for a time machine as an invitation and enter a room with a Stars Wars-like atmosphere, including posters, space ships, fancy objects, and ambience music. An intervention during the workshop mainly differs from an intervention done before in (1) that participants can compare the before and after and are actively involved in either the decision and/or the execution of the invention and (2) that it does not have to be planned, but can happen spontaneously. For example, the team might decide to move all furniture aside and concentrate on protoype work on the floor. Or a coach reacts to the momentarily mood of the

team and takes the team outside. It is important to further take into consideration the different phases during a workshop. In the following, we will introduce three different lenses for workshop phases that are relevant in the context of spatial interventions. First, innovation workshops mostly cover a diverging phase that involves the generation of new insights or new ideas and increases the information available. This is followed by a converging phase that reduces the information available (Kaner 2006). Since these phases require different skills and methods, the spatial requirements also differ. In a converging phase, for instance, a team needs a distraction-free space that supports the reduction and allows it to become focused. Second, during a workshop, a team encounters the phases of forming, storming, norming, and performing (Tuckman 1965; see above). This shift of focus from a more team-internal to a more output-oriented perspective can also be motivated by the space. Third, and linked with the second aspect, is the feeling of ownership for the space (Dawkins et al. 2017). Whereas, in the beginning, participants might feel as guests, during the course of a workshop, they more and more become psychological owners of the space (i.e., they consider the space as "theirs"). This increase in feelings of ownership can, for instance, lead to usage patterns reflecting a feeling of territoriality or of a stronger personalization of the space. It further moves the initiating focus from the coach to the team (also see below).

The *Reference Object Dimension* of spatial interventions answers the question of what changes during the intervention (i.e., what are the targets of an intervention—people or objects?). The obvious option is to change the spatial set-up or furniture within the space. However, the workshop participants and thus their interaction patterns with the space can also be considered as a spatial intervention. For instance, a participant who sits across the table facing a second team member displays a rather 'reciprocal confrontational' posture. By moving his position to the edge of the table, he changes his role to a 'consorting' position. This becomes even more of a 'collaborating' role if he decides to join the other team member on the same side of the table because he now "sees the world from the same perspective" (Lawson 2001, p. 135). If these two team members now decide to draw their attention closer to the whiteboard (i.e., their vertical working surface behind their table), this changes not only their perceived roles but also the patterns of interactions, with both team members now working collaboratively. The consideration of both space and user as possible reference objects of an intervention reflects our conceptualization of space as outlined at the beginning of this chapter. It also underscores the notion of a space simultaneously containing structural and procedural components.

The *Initiator Dimension* of spatial interventions focuses on who initiated the intervention. Especially at the beginning of a workshop, this might be the coach of the team. However, in an ideal scenario, the team realizes during the course of the workshop the potential of spatial interventions and, instead of the coach, team members internalize this knowledge and become initiators themselves. Thus, the trigger dimension also underlines the fact that the relevance and use of space during a workshop can, in addition to the process and outcomes, also be learnings of the workshop. (In this connection, we also refer to the thoughts on psychological ownership in *Time Dimension*).

Table 3 Dimensions of spatial interventions

Time	Reference object	Initiator	Type
When?	What changes?	Who initiates?	Which function?
• Before a workshop (initial setup) • During a workshop (different phases)	• Structures (objects) • Processes (people and their interaction with people/objects)	• Coach • Participant	• Motivation • Consultation • Education

Finally, the *Type Dimension* of intervention refers to its coaching role as outlined above. Here, we ask the questions: Does this intervention foster team motivation and performance (motivation), does it cater to the process and the workshop flow (consultation), or does it relate to skills and knowledge (education)? Examples for these functions have already been provided above.

The four dimensions of spatial interventions are summarized in Table 3. They not only help to reflect the role of space in workshops and show new possibilities, but also to actively plan spatial interventions. For instance, during a workshop, a coach might reflect on her activities and realize that she triggers most spatial interventions. A conclusion might be to push the responsibility more towards the team. Or, when preparing a workshop, a coach might combine the dimensions in order to create new interventions. A coach might then ask herself: What could be a good intervention for my team (1) during a workshop that (2) changes their way of interacting with the space, (3) initiated by me and (4) fostering the team's motivation?

By taking a theoretical view of coaching and a situation, and then by regarding four dimensions of spatial interventions, this section helps coaches to better understand and thus use the space at hand as a second coach before and during an innovation workshop. It further underlines the importance of the space for an innovation workshop.

5 Spatial Interventions in Practice

5.1 Innovation Space in Use: A Case Study Approach

To explore the strategic phenomenon of innovation capacity building by spatial interventions, we conducted a multi-case study with companies who were establishing innovation laboratories. The qualitative study entailed the entire process of innovation space design from strategic intent to realized intent of the innovation spaces in use (Klooker et al. 2015, 2016, 2017). Establishing an innovation laboratory within an organization can be considered a spatial intervention on the macro-level. In line with the previous sections we will focus on spatial interventions of actors and micro-structures within the established innovation space.

The formulation of an explicit strategic intent plays an important role for defining the initial design of the space needed (Klooker et al. 2015). The critical point in

unleashing the innovation laboratory's full potential, however, turn out to be whether innovation techniques and practices for using such a space are either already known, and even internalized, or are supported and acquired by means of human facilitation (Klooker et al. 2017). It seems obvious that especially those users who are not familiar with such innovation spaces and/or processes (e.g. Design Thinking) need good facilitation. Yet, leadership and high-performance team research highlight that even experienced innovation teams work more efficiently with team leadership coaches by their side (DeRue et al. 2010; Rousseau et al. 2013). In the studied cases we identified various versions of the facilitation of effective use of space. Among these were facilitators who acted as hosts to introduce and explain how the space works, what it has to offer and how to use it, as well as connecting different project teams and individual users. In one case, a team formed to manage the lab. Fulfilling different roles, the team members acted as hosts, programmers of the space and mentors of the innovation teams using the space. We also found that more experienced team members or even entire innovation teams who were more familiar with the space and/or processes became facilitators, acting as role models for less experienced colleagues and by that triggering certain activities within the space. And of course, there are also assigned coaches explicitly facilitating innovation processes and conducting workshops. In this chapter, we will especially focus on the latter case—the interplay between workshop facilitators and the innovation space. To explore how assigned innovation coaches use space to support the work process of teams and foster their interaction with the space, we observed an entire workshop and analyzed the empirical data based on the following questions: What are the spatial interventions during the design thinking workshop? How are these strategized by the facilitators?

In the following, we will first introduce the methodological approach taken in the empirical study. Second, we will outline the general spatial set-up of the innovation space and the particular Design Thinking workshop conducted. Subsequently we provide exemplary findings that illustrate spatial interventions identified in practice. We will conclude this section by highlighting crucial aspects in regard to the strategy-as-practice of spatial interventions.

5.2 Methodological Approach

During a one-day introductory Design Thinking workshop conducted by two coaches for two teams in the creative space of a large company, we collected empirical data by means of non-participatory observation followed by short interviews with workshop participants. Two researchers were present during the workshop and documented their observations by means of field notes and photographs. The latter mainly served as illustration and enabled the researchers to later remember specific situations described within their protocols of field notes. Additionally, all participants completed a survey before and after the workshop. The aim was to gain insight into their perceived experience during the workshop and previous knowledge

about Design Thinking and the innovation space. At the end of the workshop the participants' learnings and teams' experiences were reflected upon in a plenary session and documented by the two researchers present, in the form of individual notetaking. The empirical data collected during the workshop was categorized and analyzed according to the dimensions of the conceptual framework of spatial interventions.

5.3 The Innovation Space and Workshop Set-Up

The innovation space was newly created and set up for collaborative teamwork and creative sessions. The interior design was inspired by the HPI School of Design Thinking, Potsdam and provided space for two teams with approximately six team members who wanted to work in a conversational and/or collaborative mode. The space was equipped with two standing tables and approximately ten high chairs. The tables were in hexagon shape and had wheels to allow for flexibility. An open shelf contained boxes filled with basic prototyping material, post-its, and pens to support visual and interactive work. One entire wall was painted with white magnetic whiteboard paint to allow for visual teamwork, and a large screen provided the possibility to share digital material and presentations. Next to the workshop area was the kitchen, equipped with coffee machines and tea makers. The kitchen, though regularly used by the employees working on the floor, also provided a meeting space for informal conversations among innovation team members.

The agenda of the workshop was designed along the different phases of the Design Thinking process. Due to time constraints, the transitions between phases were not made explicit during the workshop, instead the overall frame was the division in the problem space (Understand, Observe, Point of View/Define) and the solution space (Ideation, Prototype, Test). The group of workshop participants totaled ten employees. The group was diverse in terms of the employees positions and levels of experience within the company, as well as their roles and responsibilities within departments and teams. Participation in the workshop was voluntary and based on interest in learning the Design Thinking method and getting exposed to its mind-set. All participants had little to no prior experience with Design Thinking, and most of them were using the innovation space for the first time during this workshop, or had so far not used it for collaborative teamwork and innovation projects but only as a regular meeting space. Two experienced Design Thinking coaches led the workshop. Each one accompanied a team throughout the entire workshop.

5.4 Spatial Interventions in Practice: Applying the Framework

Exploring the Type Dimension of Spatial Interventions Overall, we identified various spatial interventions of all three *types* (motivational, educational, consultative) throughout the workshop. The two coaches took turns providing content and methodology related inputs (educational interventions) in short plenary sessions with both teams at the beginning of the workshop and in each phase of the design thinking process. This forced the synchronization of both teams and provided opportunities to share questions and doubts. Throughout the process and within each team the coaches' role was mainly to facilitate how to work (consultative interventions). Teambuilding activities in the beginning of the workshop, informal conversations during the break and sharing outcomes enforced the experience's value for all participants (motivational intervention).

Exploring the Time Dimension of Spatial Interventions Before the workshop started the coaches adjusted the set-up of the innovation space according to specific needs regarding content and agenda. Due to the fact that the space was intentionally designed as creative space with Design Thinking furniture, only little transformation was needed in preparation for the initial set-up. Two team spaces were created by moving the flexible tables. Both team spaces consisted of a high table in hexagon shape and five high chairs. One team was placed close to a wall that served as magnetic whiteboard. The other team space was equipped with one mobile whiteboard. The wheels on the high tables were fixed so that they would not move when leaning against them. The high chairs were stacked in the center between both team spaces with the intention to force the participants to stand at the beginning. The front of the space was left free for plenary presentations and inputs. On both tables, basic materials (post-its and pens) were spread out to invite participants to use them freely. At the beginning of the workshop the group was divided into two teams. The teams were formed according to the tables the people were standing at, disregarding existing hierarchies between participants.

Throughout the workshop the coaches have used different interventions to introduce the flexibility of the space. Consequently, the teams used the potential flexibility of their spaces differently. Before Team 1 started with the first task, the coach explicitly highlighted the flexible nature of the space by telling the team to use and move everything as needed (consultative intervention). Through this he empowered the team members to take action themselves and independently of him. The teams immediately became active in adjusting their space to their needs. Team 2 immediately started with the first task without waiting for further instructions by the coach. The coach did not intervene by explaining how to use the space and left it to the team to discover the furniture's flexibility. Our observations showed that Team 2 did not move the furniture throughout the entire workshop. Reasons may be that the flexibility was not as intuitively discovered due to the fact that the wheels on the table were all fixed at the beginning even though they had seen the other team

moving its furniture. The coaches did not change the set-up during the workshop. Both coaches were experienced in conducting workshops in spaces with similar style and interior. Yet, they interacted little with the furniture and did not perform any major adjustments or rearrangements when preparing the initial set-up. Therefore, they remained neutral regarding the specifics of the space. This might add a reason why they did not trigger changes in the spatial set-up during the workshop.

Exploring the Initiator Dimension of Spatial Interventions We observed Team 2 as more active during the needs-finding-phase (problem-phase) and becoming less active during the second part of the workshop (solution-phase). While the team remained seated throughout the entire ideation session, the coach constantly moved between the whiteboard wall and the team to place their post-it's with ideas. The whiteboard wall was not movable; however, the table could have been moved closer to the wall or the team encouraged to stand up and re-group closer together in front of the whiteboard wall. At the same time, Team 1 did not change the spatial setting of the table and the chairs but changed its own spatial setting, moving themselves between table and whiteboard in order to work closer together. Additionally, the coach initiated and supported this intervention by moving into the background to leave the participants—physically—the space to work more independently. As a result, this spatial intervention, as initiated by the team itself and supported by the coach during the workshop, was successful in motivating the team to create more ideas.

Exploring the Reference Object Dimension of Spatial Interventions Team constellations changed throughout the workshop for Team 2. All 6 team members were present for the needs finding-phase, and all team members spread equally around the hexagon table with relatively large distances between individuals. One participant had to leave the workshop during the ideation phase. We observed how the thus created empty space at the team table affected the team dynamics: The remaining team members had to switch their position to avoid an otherwise awkward division of the team. These movements activated especially one team member who changed from a rather passive mode into one of taking initiative. He stood up and started moving between the whiteboard wall and the table, putting up post-it's with ideas from himself and his team mates. The increased dynamics seemed to motivate other team members to get up from their chairs and become more active as well. We observed how the increased activity also led to an increased amount of ideas created by the team. At the same time the coach moved more into the background and even left the team alone for a short period to provide space for the members to work on their own. Hence, the coach noticed that the team was finally able to interact with the space without her support.

Exploring Interrelations of Multiple Dimensions of Spatial Interventions: Time, Initiator and Reference Object Taking into consideration the entire workshop we found that the experiences of Team 1 and Team 2 differed in regard to different levels of activity throughout the process. Team 1 started off in a rather active mode, taking initiative to interact and make use of the space. The team members continued

with a more or less same level of activity until the end of the workshop. Team 2 on the other hand, was rather passive in the beginning and the process seemed much tougher. This only changed in the second half of their ideation, when the team dynamics changed and the level of activity and ability of using the space shifted strongly (see above). After the ideation phase the team moved to the prototyping material that was placed a few meters away and available for both teams. The team was immediately inspired to prototype its idea. It seems as if the experience of being able to shift from a passive mode into an active one, and at the same time from feeling unproductive and uncreative into producing many good ideas, strengthened the members creative confidence. And this again led the spatial set-up, in terms of prototyping material, facilitate their process. All team members were motivated as they expressed their excitement about the selected idea and seemed confident about their overall outcome. Team 1 who had been actively interacting with the space throughout the entire workshop, seemed rather hesitant about building a prototype. After the ideation session, they also moved to the prototyping material but then decided that they first need to discuss again what and how to build before starting. Compared to Team 2 they seemed less motivated and excited about prototyping. And the mindset shift from creating many ideas to selecting only one to be built in the end, seemed more difficult for them. Both teams presented their prototypes, however Team 2 seemed less attached to their prototype and more open to possible iterations, based on feedback from the other participants. The iterative process, and its consequence of being able to define an outcome further based on feedback from the outside, is a crucial factor of Design Thinking projects.

This example shows that despite the differentiation of dimensions in regard to spatial interventions, in practice all dimensions are interdependent and the emergence of spatial interventions throughout the workshop cannot be planned.

5.5 Emergent Strategies for Spatial Interventions

The examples provided above highlight the differences of spatial interventions in regard to the two teams observed during the workshop. Taking into consideration the entire workshop, we may conclude that teams and their dynamics differ and therefore need different coaching strategies. Team 1 was generally more active and one team member already knew the space well. The coach's focus was on how the team should work: interactively and flexibly. His intention was mainly consultative, i.e. he aimed at enabling the team to apply Design Thinking as a method. The coach empowered the team already at the beginning of the workshop, encouraging them to interact with the space and to reposition the interior according to their own needs. The other team however, already started with the first activity without waiting for the coach's instructions. Team 2's coach allowed team members to stay in the flow experience and when they became rather passive she did not consult them on how to work differently but supported their needs, for example by moving between table and wall to put up their post-its, instead of forcing members to get up. Her focus at

that point in the process was on motivating the team through a positive experience. Hence, an active and experience-oriented coaching strategy was applied. However, the coach's strategy also allowed for a crucial and spatial intervention to emerge from within the team, resulting in a strong shift in team dynamics. The "empty space" created by the missing members triggered remaining team members to become more active themselves, allowing the coach to leave the team to continue working indepndently. This in turn enabled the team to experience its own ability to create valuable outcome without the coach's close support. If the coach would have followed her initial coaching strategy—staying closely with the team and supporting it by taking over the participants' tasks—she might have inhibited their performance.

Building on the conceptual framework of spatial interventions introduced in the previous section of this chapter, the findings of our empirical study go beyond an illustration of the identified four dimensions and lead to the following conclusions. Taking into consideration the very different team experiences during the same workshop set-up and within the same initial space shows that different coaching strategies and team experiences are legitimate. Which one to choose and to what extent the actual spatial set-up becomes the 'co-coach' during a Design Thinking workshop depends on various factors that call for different strategic approaches. First, the gap between prerequisites of the general spatial set-up and degree of transformation needed before and during the workshop "sets the tone" and defines the starting point of any intervention (having to transform a hotel venue into a creative space vs. a well-equipped and intentionally designed creative space, and having loads of resources and large space available to set-up everything in the beginning vs. having to improvise throughout the workshop and rearrange the space according to different process steps). Second, the overall intention of the workshop experience serves as guide for the coach in regard to defining a strategy for spatial interventions (e.g. learning how to work in the Design Thinking mode vs. having a positive experience that motivates participants to learn Design Thinking vs. outstanding outcome). And third, the actual spatial interventions to be applied depend to a large degree on the people, on the level of individual team members (e.g., familiarity with the space, active and passive personalities, motivational nature etc.) and on the level of the team as such (e.g., team dynamics and mood, hierarchy etc.) and their interrelations (e.g., team dynamics). Whereas the first and second factors can and should be strategically planned in advance, the latter is more complex and often an often unknown before the start of a workshop. Independent of the initial strategic intention of a workshop, and therefrom resulting strategies for using the power of space as a second coach, an emergent strategy from the coach's perspective is needed in order to apply effective spatial interventions throughout a Design Thinking workshop. This subsequently allows the interplay of participants and spatial structures during the process of using a space.

6 Connecting the Dots: Strategizing Spatial Interventions

Focusing on innovation spaces in use, the previous sections help to better understand the power of innovation spaces as strategic tools to foster innovation and creativity. By means of exploring the domain of spatial interventions we contribute to intentionally designing the process of using innovation spaces. The different sections within this chapter examine (1) the integration of the topic of spatial interventions within the strategic discourse with the focus being on practitioners as the actors of strategy, (2) systematizing spatial interventions by conceptualizing a framework for them and thereby allowing an exploration of the role of space as the silent coach, and (3) looking at spatial interventions in practice to identify and explore their nature beyond the theoretical discourse. Each of the previous sections provides a different perspective on spatial interventions and sheds light on various relevant aspects. In this section, we aim to tie these areas together by connecting the dots towards a framework of strategizing spatial interventions.

We started our exploration by looking into the conceptual interplay of strategy and space and shifted the discussion from intended to emergent strategy, hence strategy-as-practice (Whittington 1996, 2003, 2006). This concept links the micro- and macro-perspectives on strategy as a social practice enabling us to better understand both micro-phenomena and the use of structural elements in their wider strategic and organizational context (Jarzabkowski et al. 2007). In line with our applied understanding of space as a relational concept (Löw 2001; Lefebvre 1974) we then introduced the concept of strategizing (Jarzabkowski et al. 2007). Strategizing refers to actions of multiple actors and their practices applied in accomplishing activities. The relational interplay of people and actions within an innovation space consists of intentional or unintentional *doing* that we refer to as spatial interventions. We understand spatial interventions here as activities that change the structures (distances, relationships between elements) and/or processes (work process, procedures, routines) in a space and thereby de-routinize the space (Sutherland 2013).

Linking the topic of spatial interventions to the practice of coaching innovation teams helped us to understand the role of space (and the people acting within it) as a 'silent' coach. Based on our understanding of a workshop as a situation where coaching and thus spatial interventions take place, we have looked into the function a coach has to fulfil before and during a workshop (and over time), as well as the threefold distinction of coaching roles. Building on this we created a framework of spatial interventions organized along the following four dimensions: (1) Time (when does it take place?), (2) Reference Object (what/who is moved?), (3) Initiator (who/what intervenes?), and (4) Type (what kind of intervention?). The latter also follows the three previously identified functional dimensions of an innovation space acting as communicator, facilitator and provider (Klooker et al. 2016).

The systemization of the strategic scope of actions within innovation spaces and during a workshop (1) helps innovation coaches to reflect on the role of space and how they do or could make use of it, it (2) may serve as tool to plan and formulate a

coaching strategy in regard to spatial interventions, and (3) underlines the role of space for innovation workshops in general.

As part of a larger case study, we applied the conceptual framework as a tool to analyze spatial interventions observed during an introductory Design Thinking workshop conducted in the newly created innovation space at a large company. Besides illustrating the usefulness of the framework as a reflection tool for our observations, we generated insights that go beyond the conceptual frame. The analysis of our empirical data about spatial interventions in practice showed that despite the differentiation of dimensions, the spatial interventions are interdependent. Consequently, their oftentimes unintentional occurrence depends on various factors. As such their application cannot be planned deliberately, based only on the conceptual framework. Our observations during the workshop show differences in regard to team experiences and coaching strategies applied, yet, a similar outcome reached. This led to the conclusion that there is a need for emergent strategies of innovation coaches in regard to spatial interventions. To what extent the actual spatial set-up can and will become a 'co-coach' during a Design Thinking workshop depends on various factors that call for different strategic approaches. Further research with a larger empirical sample may focus on creating a catalogue of strategic approaches in coaching Design Thinking. However, within the limits of our data, already preliminary conclusions in regard to necessary spatial interventions could be drawn. First the initial set-up within a workshop and, related to this, the degree of necessary changes for a specific workshop are crucial factors. Second, a defined strategic intention of a workshop guides emerging strategies of coaches throughout the workshop. Third, the diverse nature in regard to team dynamics and individuals and the resulting specificity of every team is an important criteria for spatial interventions. In our case this turned out to be the unknown factor and/or effective change agent. As highlighted previously, it is crucial to note that only the first and second aspects can (and should) be strategically planned in advance, while the complexity of the latter calls for emergent strategies as opposed to deliberate ones.

Hence when looking at innovation spaces in use and the spatial interventions occurring throughout the process of using such a space, we need to apply the concept of strategizing to make sense of them at all. In practical terms this means that strategies to unleash the potential power of space in fostering innovation and creativity during the process of using the space (by means of spatial interventions initiated by innovation coaches and teams or by designed tangible structures) cannot necessarily be realized as planned if formulated and practiced deliberately. Facilitators therefore need to be able to strategize spatial interventions—in other words, to translate the strategic intent of a space or a workshop into emergent strategies. Having linked the conceptual framework for spatial interventions provided above to the strategic discourse and applying it to practice, this chapter contributes to the practice of unleashing the power of space in regard to innovation capacity building by again shifting the focus of spatial interventions from the '*what*' to the '*how*' and thereby providing the basis for a framework of strategizing spatial interventions.

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