It is Hard Being Innovative from a Safe Distance – Theoretical Conceptualization about Innovation Awareness and Psychological Distance

Completed Research

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Abstract

Innovation events, such as the introduction of a digital innovation platform, offer employees the opportunity to take part in the innovation development processes within organizations. Although employees’ integration in these processes often fails due to discrepancies between the organizational and the employees’ values, which cause great concern to organizations, the effects of innovation events on employees’ innovation awareness (IA) are largely left unobserved. Drawing from construal-level-theory and IA literature we develop a model proposing that IA can increase because of a lower temporal, social, spatial, or hypothetical distance towards innovation events. Besides extending the understanding of how employees perceive innovation (events), which triggers IA depending on the perceived proximity or distance, we provide recommendations for organizations’ innovation communication by advising to manipulate distance dimensions to increase IA. Further, we also offer new explanations for employees’ adoption of technologies that only support extra-role tasks.

Keywords

Innovation awareness, digital innovation, psychological distance, innovation event, responsibility shift, digital innovation platform, ambivalent technologies, extra-role tasks.

Introduction

For almost every organization producing digital innovation is a key imperative. While this has been the key task for corporate R&D for ages, organizations increasingly recognize that a bottom-up approach entailing continuous innovation powered by employees’ ideas could also provide great value to organizations that want to be at the forefront of digital innovation (Nightingale 2008; Benbya and Leidner 2016). But to achieve successful outcomes and to turn employees’ ideas into concrete improvements, organizations not only need to provide the necessary infrastructure for the involvement of their workforce; they also need to sharpen their employees’ awareness and commitment toward digital innovations (Nijhof et al. 2002). Many potential approaches to foster employee-driven innovations within organizations are never realized due to employees’ lack of awareness of being responsible for digital innovation development themselves (Benbya and Leidner 2016). In order to increase employees’ awareness for development of new digital innovation ideas, some organizations have started to establish regular management actions, such as innovation events. These innovation events can be formal ways of innovation promotion, such as sending emails or intranet messages to all employees aiming to sharpen their obligation of being responsible for digital innovation and consequently reducing their distance to the innovation concept and process.

Moreover, digital transformation has given rise to new forms of innovation events, such as the provision of digital innovation platforms (e.g., Benbya and Leidner 2017) enabling employees’ collaboration on innovative ideas (Fichman et al. 2014; Nambisan et al. 2017). In doing so, an additional challenge for organizations arises. Some researchers emphasize that employees’ distance to certain extra-role tasks (tasks that are not related to their formal job profile) can also significantly influence their adoption of those technologies needed for task fulfillment (e.g., Van Dyne and LePine 1998). Such extra-role tasks in the innovation context include engagement and development of employee-driven innovation. Thus,
employees would less likely adopt ambivalent technologies solely supporting extra-role tasks, such as digital innovation platforms, if they think they are not responsible for innovation development or that the use of these technologies distracts them of doing their regular job. In this case, employees will be hesitant to use these new technologies, or might even resist using them entirely (e.g., Tyworth 2014). Consequently, employees’ reaction to innovation events also determines how they accept and interact with related innovation-facilitating technologies provided by the organizations (e.g., Leidner and Kayworth, 2006). Hence, the creation of employees’ awareness to fulfill extra-role tasks, such as innovation development, will be a first important step to reap the benefits of new innovation-related technologies in organizations and to increase thereby employees’ adoption of these technologies.

Therefore, the core of innovation events is that employees recognize organizations’ innovation objectives and identify themselves with them, which at first would reduce distance toward innovation in general, and then decrease employees’ distance to adopt innovation-facilitating technologies like digital innovation platforms, in particular. However, this identification often fails, as the organizational value system in terms of innovation, i.e., expressed through innovation events, differs from their employees’ values (i.e., lack of self-responsibility for digital innovation development) (Leidner and Kayworth 2006; Cooper 1994). This collision of values might be particularly evident when it comes to broad employee involvement in digital innovation development (e.g., Zuchowski et al. 2016), where most employees are unfamiliar with and thus are more distant to innovations. Although some employees will never lower their distance to innovation, research on the effect of innovation training (e.g., design thinking workshops), and innovation events (e.g., introduction of digital innovation platforms) has shown that an appropriate promotion of digital innovation within organizations can serve as a helpful instrument in supporting the idea and objective of employee-driven innovation (Benbya and Leidner 2017). Thus, innovation events are targeted on increasing employees’ innovation awareness (IA), i.e., the knowledge about the importance of innovation for their organization (i.e., being aware and conscious of organizations’ innovation objectives, opportunities, and threats), and having an interest in supporting the organization in innovation related-topics (Rogers 1995; Green and Kamimura 2003; Myers et al. 1996).

However, many researchers point out that the management of IA and, to accomplish its desired outcomes (e.g., innovation behavior), still meets significant challenges, as employees incline to ignore innovation events (e.g., due to a discrepancy between their own and organizations values) and with it the call for employee-driven innovation (e.g., Leidner and Kayworth 2006; Gawke et al. 2017). Accordingly, there is still room for refining the content and design of such innovation events and to understand what factors motivate employees to follow their organizations’ innovation objectives (Benbya and Leidner 2017).

Thus, in order to improve our knowledge on the effects of innovation events, we conceptualize within this paper, how employees’ psychological distance (temporal, spatial, social, and hypothetical) to innovation events shapes their IA. Therewith, we provide a more detailed understanding of how employees experience and mentally constitute innovation events drawing from the construal-level theory (CLT) of psychological distance (Trope and Liberman 2010). Therefore, our research question is:

**RQ: How does the psychological distance towards innovation events influence employees’ innovation awareness (IA)?**

In general, we contribute to research in two different ways. First, we develop a conceptual model providing a clear perspective on how psychological distance to innovation events influences employees’ IA. As a rising number of employees find their organization providing innovation events, the ability for researchers to apply proven theory to predict and model employees’ IA becomes more important. Second, in providing a model to declare IA based on psychological distance, we provide a new explanation for employees’ adoption of technologies that only support extra-role tasks. Thus, we also draw attention to the need to conduct further quantitative and qualitative research about the conceptualized model and its relationships like the different distance types and IA. From a practical perspective, this research acknowledges that a lack of IA is a serious problem and causes a potential risk for many organizations as IA is generally the first step in changing employees’ innovation behaviors, such as their adoption of innovation-related technologies. Thus, the paper highlights key actions that practitioners can take to influence IA.

The remainder of this paper draws together literature on IA (Rogers 1995; Green and Kamimura 2003) and the extant literature on construal-level theory (CLT) (Trope and Liberman 2010). Based on these theoretical conceptualizations, we derive four propositions for construal-level theory in the context of
digital innovation and present our conceptualized model. Finally, we discuss the contributions of this research and provide directions for future research.

Research Background

This section first describes the related work on IA, followed by an explanation of the concept of psychological distance based on construal level theory to develop how psychological distance to innovation events may lead to varying levels of employees’ IA.

Innovation Awareness

Medical and social sciences have long acknowledged the importance of rising individual awareness. In criminal justice, social science and medical behavioral science literature (e.g., Snell et al. 1991), the conception of awareness is fundamental to human behavior. Awareness is seen as one of the main components of consciousness rising, and achieves an appreciation of the impetus, needs, and specificity of events, issues, and processes. Prior social sciences research describes social awareness as speaking out, naming the problem, rising consciousness, and researching. It is further described as an individual’s active involvement and enhanced interest in central issues (e.g., Green and Kamimura 2003; Tillman 2002). Social awareness has been positively related to individuals’ behaviors attitudes, and cognitive development (e.g., Piaget 1975; Tsui 2000).

The concept of innovation awareness (IA) first appeared in innovation diffusion theory (Rogers 1995) and was applied as the primary stage of an innovation diffusion process model. According to this theory, innovation diffusion includes two different actors: an organization that will adopt the digital innovation or new technology, and individuals who will use the innovation or technology. Furthermore, the decision making process of innovation adoption contains five steps: awareness, attitude formation, decision, implementation, and confirmation. IA is defined as the extent to which a target population is conscious of an innovation and articulates a general perception of what it contains. During the awareness stage, an individual or organization is exposed to the existence of the innovation and is provided with information on how the innovation functions and what its benefits are. Thus, IA is an antecedent for the attitude formation stage of innovation diffusion. In the framework of theory of planned behavior (TPB) (e.g., Ajzen 1995), this would mean that awareness is an antecedent of attitudes and behavioral intentions.

The conceptual treatment of IA in the innovation diffusion theory is slightly different from the one in this study. The former focuses on “spreading the word” about a positive product (a specific innovation with a potential to increase productivity), that is already created and ready to be implemented. In the context of our study, IA is not about one product, one application, or one technology. It is the cognitive state of mind, i.e. the knowledge of recognizing the importance of innovation and being aware and conscious of organizations’ innovation objectives, opportunities, and threats, and having an interest in acquiring the required knowledge to promote and support the organization in developing innovation (e.g., Rogers 1995; Green and Kamimura 2003; Myers et al. 1996). In this sense, individuals’ IA is closer to the own responsibility to foster and facilitate innovation within the organization – identifying opportunities, speaking out, raising consciousness, and researching solutions to develop and implement an innovation. Also it can be described as an employee’s interest in knowing about innovations and strategies to deal with them. Employees’ IA is regarded to be a critical component in the continuous effort to make organizations’ innovation effort more effective (e.g., Rogers 1995).

Prior research has mainly neglected research about factors influencing IA, such as innovation events. However, since IA directly influences attitudes and behavioral intentions for innovative behavior, it is very important for organizations’ innovation success to know which determinants could increase employees’ IA. In particular, an important issue in innovation research is the lack of empirical studies on the impact of innovation events on employees and their peers (e.g., Benbya and Leidner 2016).

Construal-Level Theory of Psychological Distance

We apply construal-level theory (CLT) for explaining how employees form mental representations of an innovation (or innovation events), thus enhancing our understanding of how psychological distance towards innovation impacts employees’ levels of IA.
In terms of CLT an event is perceived as psychologically distant when it is outside of the direct and immediate physical experience and thus have to be construed mentally (Trope and Liberman 2010). In this light, all events that do not occur in the direct here and now are distant. Individuals experience merely themselves as well as the ‘here and now’ directly, thus have to be overcome distance in order to plan for the future, for distant places and other individuals, as well for the occurrence of hypothetical events. Psychological distance has four dimensions: temporal, spatial, social, and hypothetical (Bar-Anan et al. 2006; Liberman and Trope 2008). An event is perceived as temporarily distant when it takes place in the future or in the past (e.g., experiences of the first job). Social distance refers to experiences that are not related to oneself, but to other individuals (e.g., a decision for strangers or colleagues). Spatial distance concerns events located at distant locations (e.g., at another organization). Hypothetical distance arises when (supposedly) unreal or less likely events are taken into account (e.g., a whole breakdown of the information technology infrastructure).

The key assumption of CLT is that the cognitive representation of events alters with rising distance. In doing so, the abstractness or concreteness of the representations alters. In the case of high psychological distance, individuals construe more abstract representations (or high-level construals). At a low psychological distance, more concrete representations (or low-level construals) of events are construed. A high-level construal constitutes events schematic, abstract and decontextualized, while a low-level construal is associated with an unstructured, concretely and contextualized representation of the same event (Liberman and Trope 2008). The high-level construal therefore is higher on a conceptual hierarchy in regard to general meaning, centrality, and valence (e.g., Fiske and Taylor 1991; Smith 1998). For instance, a high-level construal of an innovation event would emphasize the organizing essence and abstract of this class of events; employees constitute an innovation event as an abstract and general category that has specific high-level features (e.g., advantages) and as such as an organizational chance. In contrast, a low-level conception of innovation events highlights more concrete and diverse features of specific realizations; such events are regarded as a more specific opportunity, distinguished and potentially tangible in the ordinary work of an employee (Trope and Liberman 2010).

Current research demonstrates that all four dimensions of distance (temporal, social, spatial, and hypothetical) are straight related to one another in cognitive representation (Bar-Anan et al. 2007). Moreover, it is empirically confirmed that abstraction levels and distance affect each other. In an analogous manner that higher distance leads to more abstract representations of events, more abstract representations also lead to events being perceived more distantly (Trope et al. 2007).

Overall, empirical research on CLT explains that psychological distance of any form alters the representation of events with regard to their degree of abstraction in such a way that distant (vs. proximal) entities are created as more abstract (vs. concrete). The four distance dimensions, specifically temporal, social, spatial, and hypothetical distance, building together the more comprehensive construct ‘psychological distance’, which affect in a similar way how individuals perceive events, predict, appraise, and also deal with them (Liberman and Trope 2008).

**Theoretical Framing: Construal-Level Theory in the Context of Digital Innovation**

In order to work out, why CLT of psychological distance might open up new research directions for IA, we use the example of a ‘digital innovation platform’s introduction’ as innovation event representation in the following. Most employees do not experience a digital innovation platform’s introduction directly in their organization, however still are able to think and feel about the innovation event, and take action in the introduced digital innovation platform aimed to facilitate employee-driven innovation. In CLT terms, IA is a combination of perceptions and representations toward the distal event of a ‘digital innovation platform’s introduction’ that is grounded on mental construal and psychological distance. When the distal event of a ‘digital innovation platform’s introduction’ is seen as psychologically distant, it is expected to be experienced by an employee as occurring far from now (temporal distance), to other employees than themselves or their close colleagues (social distance), somewhere else (spatial distance), and is unrealistic or improbable (hypothetical distance) (Trope and Liberman 2010). Employees will then form the distal event in high-level terms highlighting what is at the ‘core’ of the abstract conception of an innovation event, i.e., its abstract characteristics that do not differ from one realization of an innovation event to another and, as such, may be more easily related to other abstract innovation events, like introduction of a
physical suggestion box for innovative ideas or intranet messages promoting the innovation importance. To the extent that psychological distance to innovation events and an abstract, high-level innovation construal will be related to IA, it may be that IA is more diffuse knowledge about the consequences and significance of innovation events in organizations in general, rather than more concrete knowledge about innovation events and how to identify and engage with digital innovation platforms in particular.

In opposition, when employees experience innovation (or innovation events) as psychologically proximal, they perceive it as happening soon (temporal proximity), to oneself or similar others (social proximity), in a nearby place (spatial proximity), and as realistic or likely (hypothetical proximity) (Trope and Liberman 2010). CLT expects that in such cases, individuals will also form innovation events in a more specific, concrete, and varied manner, that is, by concentrating on situational features that do differ from one realization of one innovation event to another and, as such, may be more easily related to how innovation events can occur or can be promoted from organizations’ management through, for instance the organization-wide introduction of a digital innovation platform. Psychological proximity to innovation events and a concrete low-level innovation construal may thus be more likely to involve a perception about one’s own possibility to get affected by the digital innovation platform’s introduction, where the event is projected to occur sooner rather than later, at one’s own workplace rather than at another organization, to one’s self or similar colleagues rather than dissimilar colleagues, and is rather likely than improbable.

Whether employees think concretely or more abstractly about innovation (or innovation events) is attributed to a shift in purpose (Trope and Liberman 2010). As proximal events like imminent innovation events (e.g., introduction of a digital platform to enhance employee-driven innovation) entail a direct reaction, employees must understand ‘how’ they are influenced by it. To respond properly, employees form concrete construals with practical details of the explicit event. Their intention is therefore to clarify feasibility, i.e., how they can respond to the event. Conversely, distant events do not require a direct reaction but rather an assessment of ‘whether’ employees will be influenced by it. Thus, employees construe abstract construals with concentration on the desirableness of the event in abstract terms, i.e., whether it have to be averted or faced. Thus, peripheral features associated to feasibility are refrained and central features associated to desirability are taken into consideration (Trope and Liberman 2010).

**Psychological Distance towards Innovation**

In the following, four propositions are derived based on the construal-level theory of Trope and Liberman (2010) and the literature regarding IA (e.g., Rogers, 1995; Myers et al., 1996). Our general argument is that psychological distance towards innovation in general and innovation events in particular, like intranet messages or the introduction of digital innovation platforms, can influence employees’ levels of IA. Whether employees experience innovation events as psychologically proximal or distant is considered and derived based on the four dimensions (temporal, spatial, social, and hypothetical) introduced in the research background on CLT. The derived relationships between psychological distance to innovation events and IA are displayed in Figure 1.

![Figure 1. Research Model](image-url)
**Temporal Distance towards Innovation**

In alignment with CLT reasoning, temporal distance towards an innovation event (as the introduction of a digital innovation platform) can include the characteristics temporal frequency of innovation events (never vs. often), temporal length of innovation event (short vs. long), and temporal change in frequency (decreasing vs. increasing). When the temporal distance towards an event declines, employees experience an event as occurring rather sooner than later (Trope and Liberman 2010). In our context that would mean the following: When employees perceive innovation events, such as intranet messages or emails regarding digital innovation, as occurring regularly and with an increasing frequency, thus a certain level of continuousness is given and employees’ level of IA would increase. In contrast, when employees perceive innovation events as occurring seldom or never or employees do not know exactly when and if innovation events were promoted from management, employees’ level of IA is rather low or would decrease.

Upon reflecting on employees’ level of IA, temporarily more proximal events leading to more sensitized employees. More specifically, employees would develop a sense for digital innovation in general and innovation events, such as emails or digital innovation platforms in particular. When employees recognize more frequent innovation events, the effect of these events on IA would increase. That mean, the more frequent these events would happen, the more an employee is reminded of her own innovation responsibility and is actually prompted to be more innovative herself.

Overall, innovation events that are expected to occur rather sooner than later lead to a more immediate perception about the innovation importance for organizations’ management prompting employees to be more alert for new digital innovation ideas and opportunities in their environment, and thus being more aware of their own responsibility to facilitate and develop new digital innovation. We thus propose:

**Proposition 1:** The lower the temporal distance to innovation events, the higher employees’ level of IA.

**Spatial Distance towards Innovation**

When spatial distance towards an event declines, employees experience it as occurring nearby rather than somewhere else (Trope and Liberman 2010). Spatial distance includes the characteristics of physical distance (e.g., in the department or organization vs. at other departments or organizations) and virtual distance (e.g., at one’s own workplace or email box vs. at other computers) (Trope and Liberman 2010). In our context that would mean the following: When an employee would perceive that they could be directly affected or addressed by innovation events, either at their own team, in their own department, or at their own organization, the employees’ level of IA would increase. More specifically, when employees compared the innovation events in their department (or organization) to the innovation events in other departments (or organizations), and recognize that innovation events occur more often in their department (or organization) in comparison to the other department (or organizations), the effect of these events lead to an increase in IA.

Upon reflecting on employees’ level of IA, spatially more proximal events, would lead to more sensitized employees. Besides, this sensitizing effect on their awareness is not only related to believing that such events are more close to them, but also expressed a certain degree of consciousness that digital innovation should be developed in their department and facilitated by themselves. Transporting the feeling of direct responsibility to every employee consciously is important to increase IA. That means, it would be important to sharpen IA in the way that employees should be hearing about innovation directly in their close environment (e.g., their department), because then their spatial distance would decrease.

In contrast, when employees think that innovation events occur more often in other departments, such as the R&D department or other organizations (e.g., specially created and outsourced innovation hubs), then they believe that digital innovation development and responsibility is even more the responsibility and area of others, thus decreasing employees’ IA. For example, when an employee recognizes that a digital innovation platform is introduced only in the innovation department and not in their department, employees’ IA would decrease as they would think they are not responsible for innovation as the event is spatial distant to them.

We argue that innovation events perceived to occur nearby at one’s workplace or department rather than at another part of the organization (i.e., innovation hubs) or in another department (i.e., R&D or...
innovation department) would make an innovation event more concrete, thereby creating a greater sense of IA and prompting employees to be on alert for new ideas, for instance from other employees, and thus being more aware of innovation opportunities in their environment and their own responsibility to facilitate and develop new digital innovations. Hence, it follows:

Proposition 2: The lower the spatial distance to innovation events, the higher employees’ level of IA.

Social Distance towards Innovation

When employees experience events as socially distant (vs. socially proximal), they experience it as happening to dissimilar others (vs. to themselves or similar others) (Trope and Liberman 2010). Social distance towards innovation events includes the characteristics of flow of innovation information (i.e., whether employees heard about innovation events planned by the management through office grapevine vs. through formal innovation management communication in the form of intranet messages or emails), peer behavior observation, and own previous experience with events. Employees, who would consider being socially proximal towards innovation events, would perceived that innovation events promoted by the management are directed to themselves or close colleagues, being personally affected by it, or knowing close colleagues who were affected by it or may be affected. In our context that would mean the following: When an employee would be directly affected by an innovation event, for example when her supervisor directs an innovation action straight to her, by sending an email to encourage her to look out for innovation opportunities, then her distance to innovation events would decrease and she would be more alert for innovation, thus increasing her individual IA.

Additional to employees’ experience of being indirectly or directly affected by an innovation event contributing to a higher self-responsibility perception for digital innovation, employees could also only hearing about innovation events from close colleagues sensitizing them in the way that they pay more attention towards innovation opportunities and innovation events themselves. For instance, when an employee would hear from peers that they were affected by an innovation event or that they already had develop an innovation idea and receiving associated benefits from it, then the employee would perceive possible innovation events more social proximal to herself. Her IA and thus her own responsibility for innovation development would increase, because she thinks that maybe in proximal time she will be also directed with an innovation event like her close colleagues before.

This similarly agrees with prior research suggesting that not just the own experience but also hearing of comparable or other innovation events from friends, colleagues and relatives increases the likelihood to pay attention to innovation in general and innovation events in particular (Zhang and Li 2015). Thus, we propose:

Proposition 3: The lower the social distance to innovation events, the higher employees’ level of IA.

Hypothetical Distance towards Innovation

When employees perceive events as hypothetically proximal (vs. hypothetically distant), they perceived it as being realistic or probable (vs. unrealistic or improbable) (Trope and Liberman 2010). To describe it differently, employees perform assessments about an event that has a low or high likelihood of happening, and the lower the certainty (or probability) related with the event, the greater its hypothetical distance (e.g., Waksłak and Trope 2009). The event of an innovation event would then appear distant when this is an event one could experience rather than an event one has experienced, and the lower the probability of really experiencing this event, the greater its hypothetical distance. In our context that would mean the following: An employee, who considers innovation events as hypothetically proximal, would think that innovation events directed from management are very likely and could always happen. In digital age, it would only be logical for employees to expect that their organization would also focus on digital innovation development and wants to involve all employees in this process. Furthermore, employees, who have experienced an innovation event (e.g., introduction of a digital innovation platform) before, would change their probability judgements on whether future innovation events from management could actually follow.

Conversely, a high hypothetical distance could be characterized by the feeling that in hierarchical organizations responsibilities are clear regulated and thus always separate units are responsible for
innovation (such as the innovation or R&D department) and therefore employees of other departments would never think that they could ever be in charge of digital innovation development themselves. This could also apply to organizations in the public sector, were the regular business is almost more important (e.g., Tyworth 2014) as being innovative and creative or always competing with other competitors (like it would be the situation for start-ups). Thus, employees would perceive innovation events as highly hypothetical and more distant, as they would think that they would never be responsible for digital innovation and therefore their IA would be lower or decrease.

Overall, employees with a low level of hypothetical distance would perceive that innovation events could always occur or could be directed to them and would therefore use their common sense and have at least so much awareness that they consider to be responsible for identifying innovation opportunities and promoting them, even though they did not have to develop them themselves. Conversely, employees with a high level of hypothetical distance predominantly fail to recognize that innovation events could be occur and that they are responsible for looking for new digital innovation ideas and opportunities in their environment themselves. In general terms, when employees perceive innovation events as almost certain to occur, they react to it cognitively in the form of a heightened awareness by paying more attention to innovation opportunities and possibilities, and developing an interest in how to promote, champion and implement innovation. Thus, we propose:

*Proposition 4:* The lower the hypothetical distance to innovation events, the higher employees’ level of IA.

**Discussion**

To uncover the effect of psychological distance to innovation events on IA, we conceptualize and derive four propositions from literature. Thereby we focused on the psychological distance to innovation events (e.g., introduction of a digital innovation platform) and its influence on employees’ IA. CLT was used as the underlying theoretical framework for our conceptualization. Our considerations underscore the influential nature of psychological distance to innovation events on IA. From this point of view, it can be conclude that when employees experience innovation events to happen sooner rather than later, to oneself or colleagues with comparable characteristics rather than very dissimilar colleagues, at one’s department rather than at another department or organization, and is likely rather than unlikely, they are more aware about innovation events as well as their own responsibility for digital innovation and are more alert about innovation objectives, possibilities and advantages in an organizational context, and thus exhibit higher levels of IA.

**Theoretical and Practical Implications**

From a theoretical perspective, we offer a conceptualized model from which to extend our understanding of how the perception and experience of innovation events affect employees’ IA. As an increasing number of employees find their organization to be challenged by new digital innovations, the capability for researchers to apply verified theory to form and predict employees’ IA becomes more significant. CLT has been shown to offer a stable basis from which to reason how psychological distance forms an employee’s perception towards innovation events. We also provide explanations for the extension of CLT in an innovation context through the inclusion of IA in our proposed model. The study at hand exactly is such a contribution and therefore determines the stage for future empirical research. In specifically, previous research has scrutinized isolated effects of innovation events on employees (e.g., Benbya and Leidner 2016), such as perceived doubts about innovation events or that those not received employee attention (e.g., Benbya and Leidner 2017), without considering how these effects might have theoretically associated foundations. By suggesting the notion of psychological distance as a way to connection these effects through a mutual mechanism, our model provides a more detailed understanding of how employees mentally constitute innovation events on four different dimensions (temporal, spatial, social, and hypothetical) and how these mechanisms influence their IA. Apart from allowing a reinterpretation of prior findings to innovation events, the utilization of psychological distance also provides various entry points for the identification of future research opportunities. As we present a series of propositions, which are theoretical and untested so far, future research could at first seek to test the assertions laid out in this paper. The assertions herein could be tested for example through case studies. In particular, as research in this field is scant and absent of reliable quantitative measures so far that fully capture the scope and content of possible findings a qualitative exploratory study with interviews examining innovation events.
in organizations could be done to validate our conceptualized model. Moreover, in the context of digital innovation, psychological distance may also experience an extension by identifying further dimensions of distance and specifying their interaction. Thus, future research could empirically test and extend our conceptualized model with quantitative surveys.

In addition to our considerations that previous positive experience with an innovation event positively influences employees’ awareness being in alignment with previous research (e.g., Benbya and Leidner 2017), our central contribution is the finding that the degree of psychological distance, i.e. whether employees perceive it as distant or proximal along four dimensions, is an significant aspect for employees’ IA. As psychological distance is important, there will be some kind of threshold value for the effect of previous experiences with innovation events on an employee’s IA. Consequently, the question emerges how organizations are then able to accomplish their final objective of an organization-wide awareness of innovation in general and innovation-related opportunities in particular. When some employees are merely partly conscious or even unconscious due to their psychological distance, then an organization-wide dissemination of IA is not possible. In order to attain comprehensive penetration of IA among all employees, other aspects potentially impacting the relationship between IA and psychological distance may need to be taken into account. As all employees are a part of a social network through which they interchange information, for instance on innovation (events), their location in the organization may give them some advantages or disadvantages (Burt 2004). Referring from research on structural holes, one aspect that may be taken into account in future studies is the degree to which employees convey information on events between different groups (e.g., innovation and business unit) for the purpose of disseminating IA in an organization (Burt 2004). Throughout in our paper, we argued that employees have a high psychological distance to innovation events, if they shift the responsibility to the innovation department or other people in charge for taking care of digital innovation. Research on why employees are less dedicated to organizational goals such as being innovative, and why some employees shift their responsibility for digital innovation to the R&D department is still scarce and might be an interesting avenue for further research. Also future research can investigate how innovation champions, who voluntarily take extraordinary interest in innovation events (e.g., Jenssen and Jørgensen 2004), could serve as mediators of digital innovation within the organizations, encouraging innovation-related information among others.

Further, by applying the concepts of psychological distance and innovation awareness we also provide a new lens on why employees adopt or do not adopt technologies solely supporting extra-role tasks that are not part of their formal job profile. Technologies supporting extra-role tasks such as innovation development represent an interesting example of ambivalent technologies. On the one hand side the use of these technologies in employee-driven innovation can lead to benefits for the individual (i.e. official recognition as innovation champion) but also has its drawbacks, such as less time to perform the regular job. Here, we argue that a lack of IA represents a severe problem, as it generally is the first step in changing employees’ innovation-related attitudes, intentions, and behaviors (e.g., Rogers 1995). Thus, our considerations provide important explanations how employees’ adoption of new innovation-related technologies in organizations depends on employees’ awareness and distance to innovation events. In others words, employees will only adopt innovation-facilitating technologies, such as digital innovation platforms, if they are less distant to innovation events, identify themselves with the organizational objectives relating to innovation, and thus regard themselves of being responsible for innovation development.

Accordingly, our considerations emphasize key actions that practitioners can do to shape IA. Distance-related factors could be used to manipulate the concreteness of a digital innovation communication and events (e.g., intranet articles, emails, or other innovation promoting messages sent by the organization, such as innovation trainings) thereby influencing employees’ IA. Mimicking distance effects of time (by describing certain innovation (events) as occurring every day), social (by describing certain events could be directed to you and your colleagues), space (by describing certain innovation (events) could be directed to everyone), and hypothetical (by describing certain events as being highly probable) should rise employees’ perception that innovation events are closer in time, more likely, and more concrete, therefore inducing a greater sense of IA. Consequently, practical details of precise innovation events could be incorporated in innovation communication. Their aim is to explain feasibility, i.e. the means to achieve an innovative end state (e.g., how innovation can be detected, promoted and developed).
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