NORDISK ARKITEKTURFORSKNING
NORDIC JOURNAL OF ARCHITECTURAL RESEARCH

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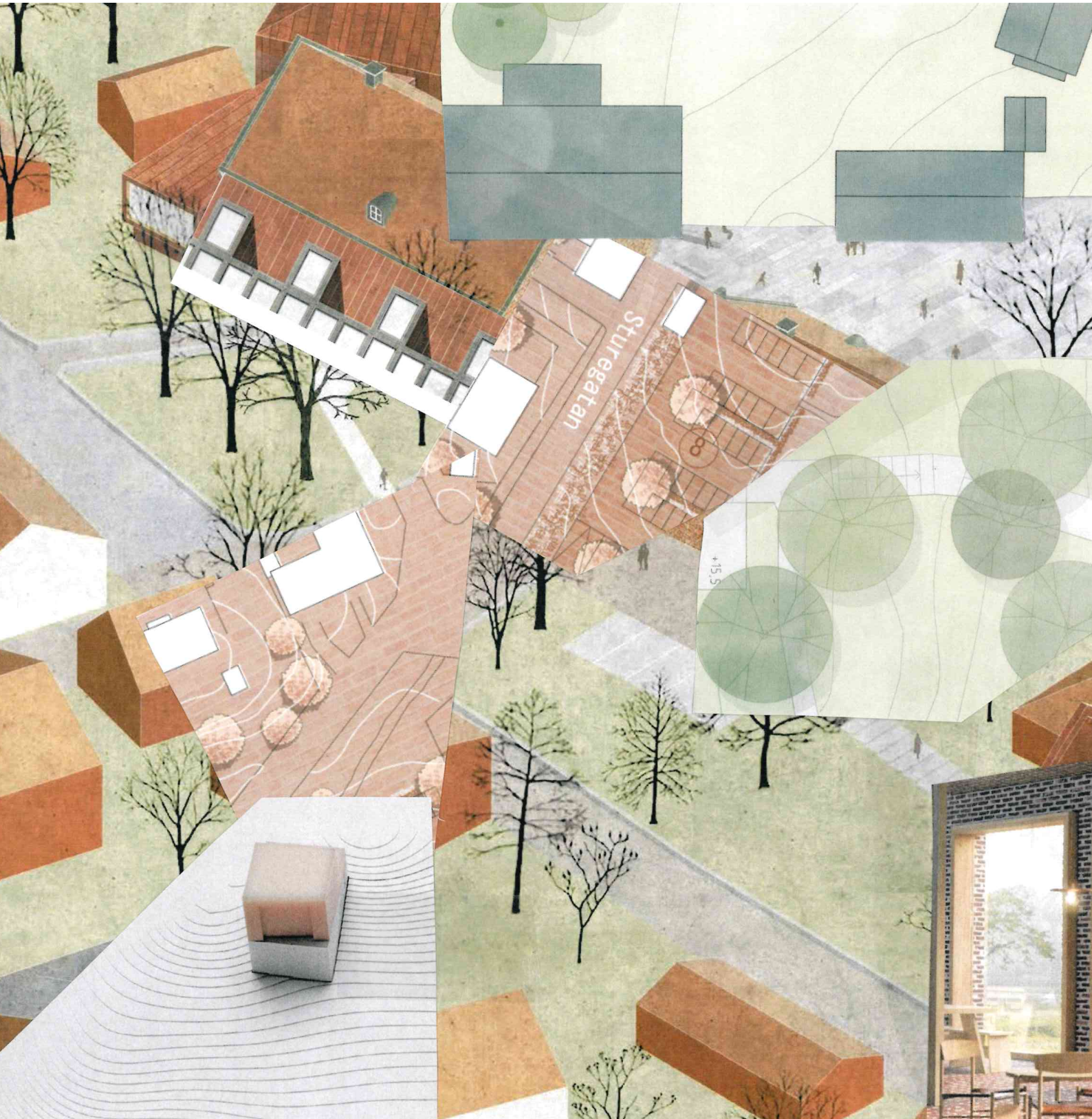
ISSUE 2 2018



NORDISK ARKITEKTURFORSKNING

Nordic Journal of Architectural Research

2–2018

Nordic Journal of Architectural Research
ISSN: 1893–5281

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Published by SINTEF Academic Press
P O Box 124 Blindern, NO-0314 Oslo, Norway.

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Illustration on the front cover: Magnus Rönn

NORDISK ARKITEKTURFORSKNING
NORDIC JOURNAL OF ARCHITECTURAL RESEARCH

ORGANISING FOR OPENNESS: WHAT HAPPENS WHEN CROWD-SOURCING ENCOUNTERS THE ARCHITECTURAL COMPETITION?

ANDREAS KAMSTRUP AND PETER HOLM JACOBSEN

Abstract

This paper examines how crowdsourcing works as a novel type of competition in the building industry. Crowdsourcing has been suggested as a way to optimise architectural output, process, efficiency and learning across competitions. Based on two years of ethnographic field studies and a number of in-depth interviews, this study used *openness* as a point of entry, as it is an important concept in both architectural competitions and newer innovation paradigms. An affordance analysis was conducted of the crowd members' interactions with platform design in a case study, and four concrete affordances were established: (1) The platform is easy to join; (2) it is relatively easy to participate in the hosted competitions; (3) crowd members focus on strengthening and positioning their own work; and (4) crowd members appropriate the work of other crowd members. The findings were used in assessing how openness on an online platform matters in relation to other competition practices in the architectural world. It was concluded that the platform studied did succeed in establishing a crowd of competition participants, but failed to establish collaborative actions between these crowd members.

Keywords:
openness, digital platform, crowdsourcing, architectural competition, affordance analysis, open innovation, ethnography

Introduction

The building industry has been criticised for its lack of innovation. One way of dealing with this has been to suggest new ways of organising the architectural competition that typically governs interactions between architectural firms and clients in the industry. Traditionally, the *open* architectural competition (Chupin, 2011) has been seen as the best way to sustain a highly innovative environment, because new architects have an opportunity to participate, establish themselves and "create a name" as the barriers to entry in such competitions are low to non-existent (Dirckinck-Holmfeld, 2016). However, arguments against open competition have also been made, e.g. it is resource-intensive to participate and the odds of winning are close to negligible (for elaboration, see e.g. Kazemian and Rönn, 2009). An alternative to the open form of competition is the *invited* architectural competition (Rönn, 2012; Silberberger, 2012; Svensson, 2013). This competition form is regarded as having a higher level of efficiency, because the process is more manageable and the clients know that they do not have to spend valuable time reading proposals that are not relevant or feasible. In a Danish context, some architects are pushing for more open competitions, whereas others argue that invited competitions and even long-term collaborations between architects and clients in so-called framework agreements will allow innovation to blossom (Thomassen, 2017). In short, choosing how to organise interactions between actors is complex, and it can be viewed as a question of balancing multiple concerns related to innovation, efficiency and fairness (Kreiner, 2010a; 2010b).

To create new ways of balancing such concerns, novel competition forms are continually being developed. In recent studies in Denmark, it was shown how interactions between client organisations and architects play out in, for instance, workshop-based or dialogue-based competitions (Kreiner, 2012; Georg, 2015; Jacobsen and Kamstrup, 2017), or in competition formats that engage the public (White, 2014). These new types of competition also reflect the ongoing discussions within the research community on architectural competitions with regard to whether the result of a competition is a design or a designer (Bergdoll, 1989).

Novel formats often vary in terms of the level of openness and how interactions between jury and participants are organised, but all forms seek to find a balance between different concerns (innovation, creativity, efficiency, fairness, aesthetic quality and so forth). In choosing a particular competition, the client and the competition advisors together "slide the bar" to find the set-up that satisfies, for instance, the required balance between efficiency and creativity.

However, recent technological advances promise to optimise both efficiency and innovativeness (Kamstrup, 2017) In the building industry, this

is evident e.g. in the use of business information modelling (BIM) in public architecture competitions (Sørensen; Frandsen and Øien, 2015). In the United States, the digital platform Arcbazar[1] has introduced crowdsourcing to the building industry and promises efficiency (i.e. cheap solutions), without compromising innovativeness of output. Crowdsourcing (Howe, 2006) can be seen as a technology-driven way of organising a competition that promises both speed and a reach beyond traditional organisational boundaries. Crowdsourcing digitally engages people (both laymen and experts), primarily for idea generation but also in other innovation phases.

1 Available at: <https://www.arcbazar.com/> [Accessed 13 June 2017].

Aim of the study

In this study, we examined what happens when a competition is hosted on a digital platform based on the idea of crowdsourcing. The competitions on the platform studied were not architectural competitions in the legal or formal sense, but they resembled practices taking place in conventional architectural competitions. More specifically, we examined what happens when openness becomes a central organising principle. We studied how this played out on a digital platform explicitly designed to create innovation in the Danish building industry through crowdsourcing by asking: How was openness afforded on the digital platform Innosite and what were the consequences of such affordances? In a sense, the study is a response to the claim by Dahlander and Gann (2010) that the meaning of *openness* in innovation studies has been insufficiently studied. The case chosen for the study was the Innosite platform operated by the Danish Architecture Centre.

The structure of the paper is as follows. In the next section, we briefly describe how the understanding of openness has influenced architectural competitions and innovation management. Thereafter, we introduce the case, in order to exemplify how the platform works in practice. The concept of affordances is also presented, as the analysis is theoretically based on this notion. However, calling upon affordances also has some methodological implications, as explained in the methods section. The subsequent analysis builds on a close examination of the digital platform, supported by insights gained from ethnographic research, quotes from semi-structured interviews and screen dumps from the platform. In a final section, the crowdsourcing platform is discussed in relation to existing literature on architectural competitions and innovation management.

Openness as an innovation principle

In this section, we briefly elaborate on the central role of openness in architectural competitions and in innovation management theory at large.

The use of architectural competitions dates back to antiquity. As Lipstadt (2003) shows, architectural competitions were used by wealthy clients in northern Italy in the fourteenth century in a search for building designs that would demonstrate power and superiority. The traditional open architectural competition is anonymous and submissions are evaluated by a jury selected for the particular occasion (Kazemian and Rönn, 2009). In the open competition, the task and design problem are presented and described in a competition brief. To ensure anonymity, the brief is the only communication between the client and the designer (Kreiner, 2007). The Italian city state competitions described by Lipstadt (2003) were a way of fostering ideas and designs outside the client network:

> *This first 'modern' competition introduced many of the elements that became constituent parts of the process: the allocation of the power of selection from patron to outside advisers chosen for their aesthetic expertise and thus for their discernment in matters of artistic competence* (ibid., p.403).

The open competition is praised for its ability to foster new and creative design solutions that a client may not have considered before organising the competition and writing the competition brief. In addition, an open competition is assumed to be fair, because no one party is favoured. Studies of how professional jury members function indicate that architectural quality is a norm for which jury members fight (Kazemian and Rönn, 2009; Silberberger, 2012). Furthermore, Jean-Pierre Chupin argues that open competitions even entail democratic and societal aspects:

> *Because of the open format and public characteristic of competitions, they have the capacity to not only generate many creative and ingenious ideas and proposals, but they have the added benefit of opening to the community the intents and implications of any forthcoming public project. In fact, the competition process should be seen as a democratic opportunity through the infusion of a rich set of alternatives to a given problem by a public, as well as through a judgement process that has the capacity to thread out the issues and concerns in an effort to select the winning project in a transparent manner* (Chupin, 2011, p.174).

In this idealistic form, the choice of a winner is based only on the quality of the proposal and therefore the open competition is considered to be both the most meritocratic form of competition and an institution promoting and strengthening democracy. However, proposals in open competitions are not always implemented. Empirical studies of architectural competitions argue therefore that these competitions are limited in their ability to develop solutions to the problems they are intended to solve (Merikoski and Eräranta, 2015). A particular risk with the combined open and anonymous competition is that clients with complex projects

run the risk of hiring an architect who excels in producing compelling stories through intriguing drawings and streamlined blueprints, but lacks the capacity to transform conceptual work into buildings and to collaborate efficiently with the many stakeholders and future users in the design process (White, 2014).

Recently, new forms of openness have been included within the competition process. Dialogue-based competitions (Kreiner, Jacobsen and Jensen, 2011; Jacobsen and Kamstrup, 2017) seek to introduce openness in competitions as a learning process structured through dialogue between jury and participants (Jacobsen, 2014). Somewhat following this idea, introducing learning and openness "between competitions" has also been suggested, so that the process does not start from scratch every time a new project is undertaken. One way of doing this is through framework agreements between clients and architects. Practitioners argue that such agreements work against the ideal of the open competition format and hamper the general level of innovation (Heltoft, 2016). However, the opposite has also been argued, i.e. that it is the long-term collaborations and institutionalisation of the repetition that allow innovation to develop in practice (Thomassen, 2017). This discussion shows how openness is connected to both innovating architectural quality and innovating efficient collaboration. The crowdsourcing platform examined here aims to be open to inclusion of broad and diverse participation, but also aims to introduce openness and dialogue between crowd members and even "between competitions".

Openness in innovation management

Cohen and Levinthal (1990) propose the concept of absorptive capacity, which refers to the ability to "recognize the value of new, *external* information, assimilate it, and apply it to commercial ends" (p.128). They go on to argue that an organisation's ability to take in knowledge from the outside and make it "its own" is crucial for its ability to innovate. In general, this outward-bound and open search process is emphasised as a key principle in the innovation process (see e.g. Jeppesen and Lakhani, 2010). In line with this idea, Chesbrough (2003) suggests the term *open innovation* as a paradigm in which the ability to organise a company's environment to make it a resource is imperative. He defines open innovation as:

> *A paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology* (ibid., p.XXIV).

In recent years, the open innovation paradigm has gained traction. Its popularity is arguably fuelled by new technological possibilities that allow companies to open up in new ways. This "opening up" has followed on from technological and conceptual breakthroughs, especially those

seen in information technology (IT) and digital media starting in the 1970s. Open-source software communities and user innovation (von Hippel, 1986) are important milestone concepts. Both point to parties outside the organisation (communities of experts and users, respectively) as key in the innovation process. The phenomenon of "co-creation" (Prahalad and Ramaswamy, 2004) has received attention recently as an approach to suggest how value is created by involving (potential) customers and other segments in different phases such as ideation, production and branding. The extent to which such developments, especially open innovation, are 'new wine in old bottles' (Trott and Hartmann, 2009, p.715) is an ongoing discussion. However, it seems reasonable to acknowledge that the proliferation of new technologies has had an impact on "opening up", in the sense that actors outside an organisation can be invited to participate in innovative procedures in novel ways, for example through crowdsourcing.

Crowdsourcing takes place on a digital platform and revolves around a one-to-many-and-back logic (Howe, 2006; Brabham, 2013) in which a central actor communicates a challenge to a decentralised, but organised crowd. That crowd, in turn, communicates answers to the challenge. In other words, crowdsourcing represents a structured method for connecting an organisation with the world and builds on the insight that knowledge from actors other than those the organisation normally encounters is important in the innovation process. As with open innovation, whether crowdsourcing is a new or old phenomenon is under debate. While many examples of non-digital crowdsourcing phenomena have been suggested[2], in this study we consider crowdsourcing to be an activity that takes place solely on digital platforms, as also suggested by Estellés-Arolas and González-Ladrón-de-Guervea (2012) in their review article. This view of crowdsourcing as a digital activity entails a methodological precision that allows for a more distinct analysis and, ultimately, more focused conclusions. Research on the crowdsourcing platform Innocentive[3] (Lakhani, et al., 2006) found that challenges uploaded on this platform were more likely to be solved by someone not professionally trained in the domain of the challenge. For example, a challenge defined as falling within the field of "chemistry" was most likely to be solved by a crowd member whose field of expertise or educational background was far from the "chemistry" category (Lakhani, et al., 2006, p.9). This highlights how opening up and involving external actors can be beneficial and indicates that doing so has seemingly become easier given new technological developments.

Arcbazar is one of only a few platforms to use crowdsourcing principles in architecture. It aims to bring clients and architectural designers together by acting as an online marketplace for small- to medium-scale architecture projects. In this study we examined another platform, Innosite, designed and operated somewhat differently to Arcbazar.

2 The most famous of these is the making of the Oxford English dictionary in the late eighteenth century; see ‹http://www.wired.co.uk/article/the-oxford-english-wiktionary› [Accessed 11 June 2017].

3 Innocentive is a US-based digital platform that aims to solve problems in maths, chemistry, the physical sciences, biology, computer science, business, economics and engineering. It does so via digitally organised competitions in which a dedicated community of amateurs and trained researchers is exposed to certain problems. The incentive to participate is considerable prize money. See ‹www.innocentive.com› [Accessed 11 June 2017].

It was designed to function as a crowdsourcing platform in the architectural world and in the building industry.

The Innosite platform

> *Innosite is an open innovation platform, which connects players with a need for innovation with people who have great ideas* (Innosite, 2017).

The digital platform Innosite[4] was designed to foster innovations using certain technological and conceptual means. Innosite was active from 2011 to 2015 and was operated by the Danish Architecture Centre (DAC). It was primarily funded by the Realdania association[5]. Both DAC and Realdania are concerned with the development of architectural practices and innovation in and of the built environment in Denmark:

> *Open innovation platforms facilitate the involvement of users and experts in the development processes. This is because sharing, collecting and selecting ideas and solutions can be done both cheaper and faster than in traditional development and, moreover, independently of the individual project* (Innosite, 2017).

Inspired by the open-innovation paradigm, the platform adhered to the idea that technological improvements do not simply enable the various issues (e.g. innovation, efficiency and justice) to be balanced in managing a competition (Kreiner, 2010a; 2010b), but rather that they allow e.g. efficiency and innovation to be balanced *and* optimised simultaneously, without compromising fairness in each competition. As the quote above shows, the idea generation facilitated by the platform was expected to have greater reach, to have the potential to be more innovative and to be cheaper, faster and independent of the individual project. The latter is particularly relevant, since it is argued that "openness between competitions" can allow knowledge flow, generating a positive spill-over between competitions instead of starting over in each competition. Therefore, the Innosite platform was organised to establish transparency between competition actors and their design ideas (Kreiner, Jacobsen and Jensen, 2011). This aspect of organising information and knowledge flows between different competitions to create both better innovations and more efficiency is new in the context of architectural competitions.

From 2011 to 2015, Innosite hosted approximately 25 competitions related to the building industry. Based on the wording of the competition briefs and the character of the incoming proposals, some of these competitions were comparable to architectural competitions in terms of scope, output and processes, while others could be compared to architectural competitions only in terms of the process. For example, the *Sleep Tight* competition was an idea-generation competition aimed at broadening the discussion on student housing in the major cities in

4 Available at: ‹www.innosite.dk› [Accessed 11 June 2017].

5 As Innosite was founded for a four-year period, the design and construction of the site, its daily operations, advertising and additional activities were all funded in one lump sum. The platform did not operate on "market terms" (i.e. it did not need income to pay costs). The amount received from the Realdania association was substantial, such that Innosite was the largest, most ambitious attempt to test and operate a crowdsourcing platform located in Denmark and situated in the building industry.

Denmark, while *Build What Here* was a competition aimed at designing and constructing a landmark at the popular Roskilde Music Festival in Denmark. These competitions were comparable to conventional architecture competitions, because the client wanted to develop and select a new building design. In contrast, the *Trash or Treasure* competition was about finding new solutions to waste management in cities and in terms of scope and output it had less in common with conventional architectural competitions, as it was about generating knowledge rather than concrete designs.

All the competitions organised on Innosite were inspired by the principles of open innovation and crowdsourcing, which meant that they followed certain procedures. These procedures were shaped by strategic ambitions, daily routines and "the art of the possible", as the community manager of the platform put it in interview, and by the platform's design and technical set-up.

Each competition began when the operating team uploaded a competition brief, which presented the challenge (most often in 50–100 words). The brief also elaborated on the context of the challenge and announced a deadline for submitting proposals. Finally, it described the assessment criteria that would be used to evaluate the proposals. After the brief was uploaded, it was visible to all registered users (or "crowd members") and it was then possible to upload proposals. This type of public exposure and the lack of secrecy were design features deliberately requested by DAC, which wanted to address and challenge how intellectual property is perceived and dealt with in the architecture industry. In addition to the promised innovative potential, decision makers at DAC viewed the open-innovation paradigm as a good way to handle the issue of intellectual property, where the aim was to challenge the existing non-sharing culture in the industry.

The crowd was permitted to upload proposals as soon as a competition was launched (i.e. when the competition brief was uploaded). Competitions lasted from five to eight weeks and only one competition was active at any given time. In almost all competitions, proposal uploads followed the same pattern: a few proposals were uploaded within the first week, then a constant but small stream of uploads followed until the last week, when most participants uploaded, with uploads peaking on the final day of the competition. A crowd member who uploaded a proposal could continue to edit and incorporate new ideas and feedback for as long as the competition was open, as proposals were not regarded as submitted until the competition deadline. Then, at the predefined deadline, the platform deactivated the upload button and all proposals uploaded by that point were automatically entered into the competition. The community manager then chose 20 to 30 proposals to be presented to the jury when it met to make the final selection. The jury deliberated for approximately three hours before choosing a winner.

Method

Methodologically, we examined the platform as a single case study, as this approach is relevant for researching complex organisational settings that are not well explored and conceptualised (Flyvbjerg, 2006). One of the authors was present in DAC for approximately two years, during which he carried out ethnographic research (Neyland, 2008; Fayard and Van Maanen, 2015). He was connected with the team operating the platform and sat in an open-design office space together with the team responsible for both the daily operations and the long-term visions for the platform. This operating team consisted of four individuals, with whom he had meetings on a weekly basis. He also attended meetings with other organisational units at DAC, including the communications department and the strategic management. Furthermore, he took part in meetings with potential competition owners and in sessions with the company that designed and produced the platform.

The ethnographic work exposed how terms such as "competition brief", "jury deliberations", "assessment criteria" and "architectural quality" were transferred from the open-office landscape to the platform. The language of DAC and the building industry at large was gradually established on the platform, not only when the operating team used their professional terms and vocabulary in communicating with crowd members, but also through the platform's actual design. In terms of the latter, DAC contacted the platform design company on several occasions and asked it to change wordings and categories on the platform to reflect more "architectural language".

Several months of ethnographic research (documented in observation notes, soundbites, meeting notes and screen dumps) allowed us to construct questions to guide semi-structured interviews with a number of key individuals, primarily at DAC. All of these interviews were digitally recorded. A summary of the interviews and observation situations can be found in Appendix A. Furthermore, we had access to memorandums and other internal documents produced in the set-up phase, as well as evaluations and other documents related to the platform.

Studying digital interactions

For the digital part of the ethnography, one of the authors created an online profile and thus became part of the crowd. On the profile, he wrote that he was a researcher. In the first two weeks, he remained in the background and did not actively interact. After this initial phase of the digital research, he began to take a more active part on the platform, commenting on and rating uploaded proposals to learn how the process worked and what the consequences could be. This was a purposeful decision, because we wanted first to understand the platform without influencing it too much, but thereafter to actively become part of the crowd and gain experiences in terms of interacting with other crowd

members and uploading material through the platform. It is relevant to note that the Innosite platform is not designed to afford instantaneous interactions (through elements such as "video chat" or "instant messaging") but rather delayed interactions, where text and votes are uploaded and become visible to other actors on the platform, who can respond to these uploads. This means that we did not observe direct actions and interactions as such, but rather traces of these (Koed Madsen, 2012). Analysing these interactions therefore also required us to draw on insights from the document analysis approach (Justesen and Mik-Meyer, 2012), wherein (traces of) interactions are digitally deposited and approached as pieces of text. Acknowledging the lack of direct observation of social interactions and actual design work in the study, one of the authors established a smaller group of "test persons" that he could ask to do certain things on the platform, which he could then observe. This test group was exposed to platform designs and situations in order for the researcher to see (directly observe) how they would react. The test group helped us establish a preliminary understanding of how actual crowd members might engage with the platform. This was especially helpful when designing the interview guide for in situ interviews with crowd members: One of the authors conducted several on-platform interviews, where crowd members were approached by posing questions on their profile pages. In this way, we held in situ interviews with competition winners, highly active crowd members, members who never won anything and members who were more or less inactive on the platform.

Analysis

To structure the analysis, inspiration was taken from affordance theory as proposed by Gibson (1986) and advanced and developed by Norman (1999), Hutchby (2001) and others. The use of affordances to examine digital devices is an approach that has evolved in pace with the proliferation of digital technologies (see e.g. Gaver, 1991; Mcgrenere and Ho, 2000; Kaptelinin and Nardi, 2012). In recent decades, organisational scholars have also taken an interest in applying affordances to understand the interplay between technology and organisation (Fayard and Weeks, 2007; Zammuto, et al., 2007). Building on American pragmatism and especially the empiricism of James (1976), Gibson opposes dualistic thinking. He claims that human relationships with objects and the environment are immediate and real. To exemplify, Gibson writes:

> *I prefer to say that the real postbox (the only one) affords letter-mailing to a letter-writing human in a community with a postal system* (Gibson, 1979 cited in Rappert, 2003, p.579).

Gibson argues that the event of posting a letter requires both a postbox that is designed adequately – it have must an opening that is neither too small (so that letters will not fit) nor too large (so that the letters it

holds are exposed to bad weather) – and a human who writes letters and wants to post them, in the belief that a letter dropped into a postbox will be handled carefully and delivered to the intended recipient. Here we see the implications of Gibson's point about "a community with a postal system", which refers to the environment in which the event takes place and is made possible. Therefore, for Gibsons, affordance theory has three important elements – the object, the actor and the environment:

> *An affordance is neither an objective property nor a subjective property; or it is both if you like. An affordance cuts across the dichotomy of subjective-objective and helps understand its inadequacy. It is equally a fact of the environment and a fact of behaviour* (Gibson, 1986, p.129).

This quote stresses Gibson's pragmatic view. However, focusing on the latter part of the quote reveals an important trait: that affordances are both functional and relational. They are potentialities in the object/-actor relationship in a specific environment. With this, it becomes clear that drawing on affordances as an analytical focus is a way of emphasising that the aim of the analysis is not to describe inherent qualities of objects or to examine intentionality or psychological inducements. Rather, it is to search for interactions and effects between object and actor. As mentioned above, observing such interactions on digital platforms entails a displacement, as it is most often traces of actions that can be observed. In the case of the Innosite platform, these traces helped us to establish affordances through content in posts, comments, likes, ratings and so forth, as the traces were combined with ethnographically deep knowledge of the platform and the key actors engaged in operating it, the platform design and in situ interviews.

Approaching the platform through the notion of affordances meant that we were not interested in discussing conceptually which actions are (potentially) possible due to the platform design (for proponents of this approach, see Zammuto, et al., 2007) but rather to elaborate, in concrete terms, what happens by focusing on how interactions between design and crowd members unfold (for proponents of this approach, see Fayard and Weeks, 2007). In practical terms, we undertook the analysis by first describing the relevant platform design features. To the greatest extent possible, we sought to explain why these features were included in the platform design. Next we determined how crowd members interacted with the platform design, and finally we summed up the findings. This analytical focus and academic interest obviously also shaped the kinds of interactions we examined (and therefore subsequently the affordances that could be established); engaging with an empirical situation (such as a digital platform) can result in identification of a varying and vast number of affordances. Based on the material we collected, we were able to establish four different, to this context relevant, (inter)action patterns between crowd and platform. These were: 1) easy to join,

2) relatively easy to participate, 3) crowd members focus on themselves and 4) crowd members appropriate the work of others.

Affordance 1: Easy to join the platform

> *The platform is open to players within and outside the building industry, allowing property developers and companies to invite tenders for development assignments, share ideas and provide inspiration for new innovation methods* (Innosite, 2017).

This quote suggests that the platform was designed to be open to everyone. It implies that a visitor should not refrain from joining the crowd due to preconceived ideas about not being professionally trained or lacking experience within the field or domain. The outreach ambition for the platform is underlined in the phrase "within and outside the building industry". What mattered was that the potential crowd member identified as a player as someone who would participate in the crowdsourcing "game". Figure 1 shows the registration page which new potential registrants were shown when they clicked on "Sign up now!"

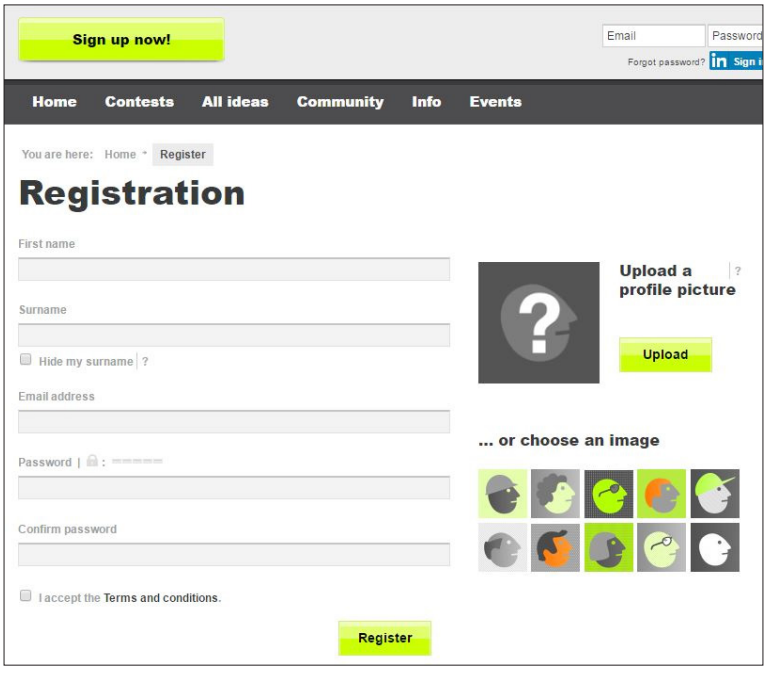

Figure 1
Screen dump of the Innosite registration page. Registration did not require much information or any upload of diplomas or other documentation of skills or proficiencies (Innosite, 2017).

Typing in name, email address and password was all it took to become part of the crowd. There was no verification or approval of previous experience or qualifications. Completion of the form and a click on the "Register" button let the visitor know that the only thing left to do was to activate the account, which was achieved by clicking a link sent to the email address provided. After activating the account, the visitor became a member of the crowd and was able to participate.

At one point, DAC wanted to create a more elaborate registration process in which potential crowd members would have to describe more about themselves during registration by creating an online resume and uploading credentials, a portfolio and a photo. The company which designed the platform strongly advised against this possible redesign of the site, as it believed that the change would result in a smaller crowd both in numbers and in scope. They argued that "it has to be easy to join. There can be no ambiguity in the platform design that keeps potential crowd members from joining" (Interview 1). Therefore DAC abandoned this redesign and, over the four years of hosting competitions, the crowd grew to approximately 3500 members, including a wide range of professionals and amateurs with an interest in the built environment. DAC found that the size of the crowd was a sign of success and that "the design in this case worked as intended" (Interview 1, authors' translation). Work on establishing this affordance in the present analysis had an important methodological lop-sidedness, as only crowd members who actually found their way onto the platform were interviewed, which self-evidently influences the findings. However, as all these in situ interviewees, with an extreme degree of agreement, confirmed that the process of signing up on the platform, and thereby gaining access to the competitions, was non-demanding, we accepted the bias in the method. One of these in situ interviewees stated that "Registration on the platform was indeed the easy part, especially because you can create your profile using your Facebook or LinkedIn account. I did not want to do this [use Facebook or LinkedIn], but registration still took less than 30 seconds." (in situ interviews). Furthermore, the test group was asked to create profiles and no challenges were reported. When talking to them afterwards, they unanimously argued that the platform was easy to access. Following Gibson (1979, 1986), it is clear that the postbox (here, platform) was designed adequately so that a community of letter-writers (crowd members) could emerge and potentially begin to post letters (join competitions and upload proposals).

Affordance 2: Relatively easy to participate in competitions

However, a relatively large and diverse crowd was not in itself a goal of the platform organisers at DAC (Interview 4). To fulfil the promise of the platform, the crowd members also had to be active and participate in competitions by uploading proposals. The very first step in participating in a competition was to log in. Once logged in, a click on the "active competition" button on the front page took the crowd member to a subsite where the current competition was explained. In a box on the right-hand side of the screen, there was a box with a button reading "Upload your idea".

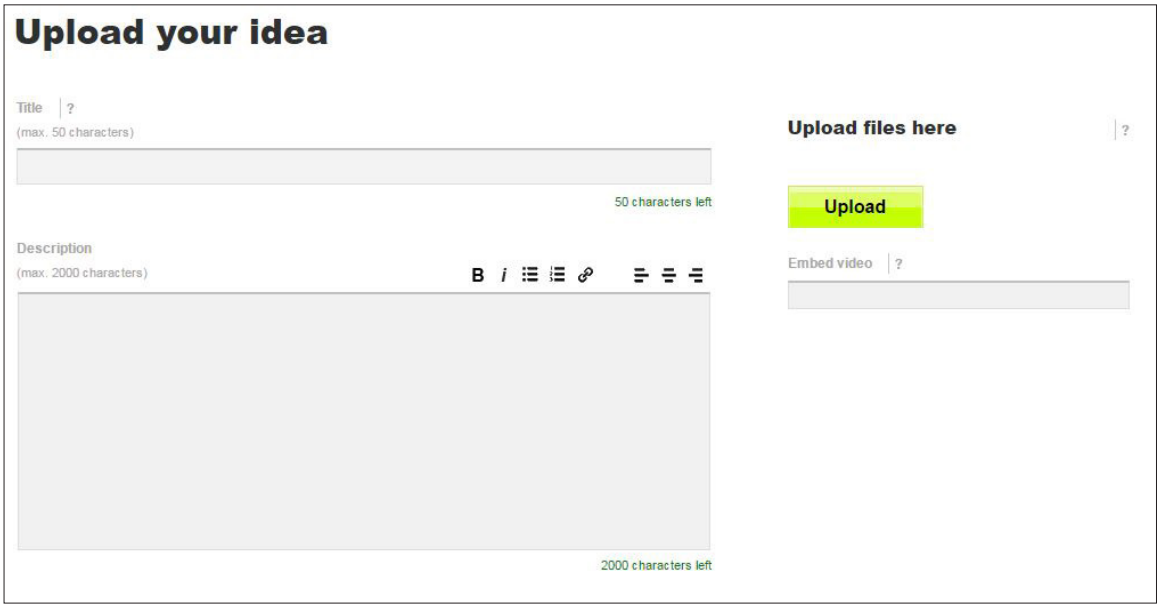

Figure 2
Screen dump of the upload page, which shows that uploads were technically non-demanding (Innosite, 2017).

If the user clicked on this button, another page opened on which the actual upload could be done (Figure 2). The title of the uploaded solution could not be more than 50 characters, while the description of the idea was restricted to a maximum of 2000 characters. Furthermore, it was possible to attach documents (e.g. PDF, BMP, JPG) and to embed videos (e.g. from YouTube). When asked about the more technical side of the upload process, some crowd members complained about the platform's poor stability and some mentioned problems when trying to upload close to a deadline (Interview 3). More specifically, the platform sometimes "froze" close to the deadline for uploading proposals, and then failed to respond to any commands given by users. The company maintaining the servers explained that this problem could occur when "there is a lot of peak traffic on the site" (Interview 1). On some occasions, the deadline was extended due to such technical issues, which in turn caused turmoil among some crowd members, who argued that they had not experienced any server issues and therefore that it was unfair that other crowd members got more time to finish and upload their proposals (in situ interviews). However, all instances of the platform being offline or otherwise not working were documented in the server log and therefore it was relatively easy for the operating team to review these, even though it was difficult at times to communicate this to the crowd. There were also some complaints about server issues which did not result in extended deadlines, which resulted in crowd members threatening legal action (Interview 2).

It is interesting to note that all but one of the winning solutions over the four years contained either pictures or drawings. Moreover, the share of proposals including pictures or PDF files increased significantly over the four years. In the first few competitions, approximately 50% of the

uploads contained attachments, while nearly every upload in the final competitions was accompanied by an attachment. According to a member of the operating team, this development was due to a realisation among the crowd that the odds of winning increased when drawings and pictures were included in the proposal. However, while pictures or PDF files apparently increased the chances of winning, the same operating team member stated that she could "not see a relationship between how many words a proposal contain[ed] and the chances of winning" (Observation 2).

However, participating in a competition is not simply about being 'technically' capable. It is also a matter of being able to understand and decode what the competition owners are asking for. For instance, is the competition brief formulated in language that makes sense to the crowd members? When the crowd members were asked about this during in situ interviews, there was general agreement that it was relatively easy to participate in this regard. They reported that the questions in the competition briefs were formulated in an understandable, relatively simple manner and, in general, the community manager took time to clear up any misunderstandings about the initial question. On average, a competition had around 100 uploads, which exceeded the expectations of the operating team and the design team. However, it is important to note that these uploaded proposals varied in substance a great deal and it was often argued by the community manager (who oversaw the uploads) that, in her mind, a relatively large proportion of the uploads were "too unfinished to enter the competition" (Interview 2). This is supported by several interviews with crowd members, who stated that at times it was difficult to decipher what the competition owners were looking for. For instance, one crowd member said "It was easy to understand the competition brief as almost no 'too-technical' words were used, but I felt that it was really broad and I did not know in which direction to *build* my proposal" (in situ interviews). Combined with our observations of the test group (Observation 4), this led us to conclude that it was "technically" rather easy to participate in competitions. However, when it came to answer the challenge, the uploaded proposals demonstrated that some crowd members had difficulties "decoding" the challenge and the competition brief. However, this did not significantly deter crowd members from trying to answer the uploaded challenge. Overall, a considerable proportion of the uploaded proposals were found not to address the challenges in substantial or useful ways (Interview 2).

Affordances 1 and 2 combined meant that the platform was open and allowed members and newcomers to relatively easily engage with it. Thus, openness and a wide reach, similar to that seen in open architectural competitions, were achieved. In this regard, the community manager estimated that approximately 50% of the crowd was from Denmark, while the rest were scattered globally. This manager also noted that

"approximately half of the crowd [was] studying and the other half [was] working, primarily as architects, urban planners and sociologists, but also as construction workers and engineers, as well as consultants, managers and office workers" (Interview 2). However, the broad openness of the platform came at a cost, with some of the crowd members arguing that the criteria for participating in competitions were at times difficult to decode. Following Gibson's example, one could say that there was a (small) misalignment between the design of the postbox and the letters being mailed by actors.

Affordance 3: Crowd members focus on strengthening and positioning own work

Openness on the platform was not just a matter of the competition brief having a wide reach similar to that of open architectural competitions. Being inspired by both the open-innovation paradigm and ideas from collaborative online communities, it also meant openness *among* crowd members. The operating team and the design company were keen to talk about co-creation (Interviews 1 and 2) as an important factor for the platform's potential for success. It was stated that if the platform was to "really become a success, co-creation between the crowd members is needed" (Interview 4).

As mentioned above, the platform was designed so that whenever a proposal was uploaded, it became visible to the entire crowd. The reason for this was two-fold. First, the design company argued that collaboration among the crowd members would lead to more activity and therefore to better proposals (Interview 1). The idea was that crowd members' interactions with each other would serve as a sort of pre-qualification of ideas. In addition, DAC had an incentive to promote collaboration. Its ambition was to test and challenge the tendency within the architectural world in general and architectural competitions in particular, to ensure secrecy and avoid idea sharing, due to the fear of intellectual property theft. This non-sharing culture was deemed by some decision-makers at DAC to be an important reason for the industry's lack of innovativeness (Observation 3).

Figure 3 presents a screen dump of the module automatically attached to all uploaded proposals. It illustrates how the platform design sought to promote collaboration among crowd members through three features: a button (top-left corner) allowing crowd members to generally state that they liked this idea, an evaluation set-up where other crowd members could evaluate the idea on the same criteria as stated in the competition brief, and another button in the bottom-right corner ("This idea inspired me!") that allowed a crowd member to formally state that they were inspired by the proposal. The "I like this idea!" button was rarely used and the in situ interviews with crowd members revealed confusion. Some crowd members expressed uncertainty about the

Figure 3
Screen dump of the evaluation module attached to all uploads, including the "This idea inspired me" button (Innosite, 2017).

signals they would send by clicking it (and to whom these signals would be sent). Many directly stated that they did not want to promote other crowd members' proposals and thereby run the risk of downplaying their own proposal (in situ interviews). The "inspired by" button was introduced to legitimise inspirational work. The idea was that, by clicking that button, a crowd member would signal that they were building on and advancing that particular idea. This button was very rarely used. The in situ interviews suggested that the complexity of intellectual property rights, combined with the individual members' desire to win competitions, trumped the possibility of co-creating proposals with other crowd members. The evaluation set-up, through which crowd members could evaluate each other's proposals by ranking one to five stars on the assessment criteria as defined in the competition brief, was also rarely used. However, according to the community manager it was used more than both the "I like this idea!" button and the "This idea inspired me!" button (Interview 2). The in situ interviews revealed that evaluating ideas in this way was less uncomfortable for crowd members, as they felt they could give a more nuanced evaluation. For instance, one argued that "if I put five stars on *creativity*, I can still put one star on *realisable* to make a balanced evaluation". However, most of the crowd members interviewed stated that they could see no reason to evaluate the proposals of other members (in situ interviews), and this resonates with our general observations on the platform, which showed that the evaluation set-up was rarely used.

Summing up, almost no crowd members wanted to collaborate, interact or even acknowledge other crowd members' work. At one point, the community manager bluntly stated that there was "no community on

the platform" (Interview 2, author's translation). In line with Gibson's postbox, the objects uploaded to the postbox might have had certain qualities, but the actors in the community did not accept the invitation to establish an active community.

Affordance 4: Crowd members appropriate the work of other crowd members

The last affordance also addresses (potential) interactions between crowd members. However, while the former suggests that crowd members on Innosite focused on their own work and thereby did not interact directly with each other, the focus here was on more indirect interactions, or rather how crowd members were inspired by the accessible information when composing their own proposals.

When a user registered and became part of the crowd, they were given an online space. With reference to Facebook, this space was called a "wall". All activities concerning the user were gathered, logged and visible on this wall, which was personal in the sense that all activities involving the particular user were shown there. However, it was not private, as all registered crowd members could visit all other members' wall, examine their activities and even contact them by sending online messages. Moreover, the content of the wall was not limited to the ongoing competition. Rather, it was an enduring online space where all information and (traces of) activity were stored and visible, even if a crowd member deleted their profile.

Other features on the platform shared this idea of complete transparency or full disclosure. As mentioned, the platform in total hosted 25 competitions and all information (e.g. uploaded ideas, comments, videos) from previous competitions was accessible at all times. Every crowd member could examine how a competition was progressing and how earlier interactions had unfolded. There was also a dedicated search function. Former competition winners were highlighted on the front page of the platform, which prompted crowd members to examine them in terms of the substance of their proposals and their activities on the platform. In addition, due to the enduring nature of the platform, all uploaded information remained visible even if the member was not online or had deleted their profile (Observation 1 and 2). In other words, openness here meant that all generated information was accessible at all times, regardless of which member initially generated it. This design choice refers back to the notion described above about "openness between competitions". By preserving already generated information and established knowledge from former competitions hosted on the platform, the hope was that less work and energy would be wasted. This design choice made it legitimate to borrow from previous proposals and from proposals for current competitions.

As mentioned above, crowd members did not establish direct interactions on the platform, nor did they use the function to acknowledge the work of others. However, observations of the platform, supported by insights from the design company (Interview 1), made it clear that crowd members did indeed seek inspiration from others. Several competition winners stated that they used the open platform design and the search functions to examine winning proposals in earlier competitions (in situ interviews). Interestingly, a high-ranking director at DAC disclosed at a strategy meeting that he believed that the innovativeness of the platform was declining, as he claimed that "generally the latest competitions show less innovative vision" (Observation 3). Based on the daily and recurrent practices on the platform, this intuitive remark was reiterated by the team operating the platform. The community manager said she felt that uploaded proposals were beginning to somehow look more alike, while "not being able to exactly pin down this feeling to particular proposals" (Interview 4). From the design company, it was possible to get basic descriptive statistics on the platform and the crowd members' practices thereon. One such inquiry revealed that the search function on the platform was more or less used only to find former winners.

This last affordance could be termed *appropriation*, as it covers how the design of the platform invited crowd members to be inspired by other crowd members' work and how these crowd members subsequently picked up on this to incorporate earlier (successful) bits and pieces of other proposals into their own work. As shown earlier, crowd members felt hesitant to make these inspirations formal as they assembled their own proposal, but here we see that they *did* look at the work of others. All the crowd members we interviewed agreed to some extent that they had looked at others' proposals while composing their own and they did not feel that this was cheating "as it was made possible by the design" (in situ interviews). One crowd member further elaborated that because of the upload pattern (where participants upload just before a competition ends) it is "not possible to borrow from ideas in the same competition, because there will not be time to incorporate it into one's own proposal [...] and this is fair, because then you do not borrow from entries in the same competition. Only those already finished" (in situ interview). Importantly, with "appropriation" we make no reference to either the innovative or aesthetic qualities of proposals, but rather indicate how proposals were developed. The comments regarding the lack of innovative vision are empirical in the sense that they were made by professionals working in the industry.

Discussion

Openness is an important principle for innovation in both open architectural and crowdsourcing competitions. On the Innosite platform, organising for openness resulted in different things. Four affordances were carved out: easy to join the platform, relatively easy to participate, crowd members focusing on strengthening and positioning their own proposals and crowd members appropriating other crowd members' work. The first two affordances show that the platform had a wide reach – it was easy to become part of the crowd and easy to understand how to take part in the competitions. In other words, the platform was open in the same way as openness is perceived in the conventional open architectural competition: in the active search for new, innovative solutions, the Innosite platform activated a crowd far beyond the clients' networks, as open architectural competitions can also do (Lipstadt, 2003; Kazemian and Rönn, 2009; Chupin, 2011). However, analysing the third affordance showed that the aim of strengthening the innovative output through direct personal, collaborative digital interactions between crowd members was not achieved. Both architectural competitions and crowdsourcing competitions are competitions for primacy in which relative position matters (March, 1991). Collaboration and interactions have also proven difficult to establish in dialogue-based competitions, because architects primarily participate to win and not to give away their ideas (Kreiner, Jacobsen and Jensen, 2011). Analysing the fourth affordance showed how the "openness between competitions" resulted in the crowd beginning to appropriate earlier work. We now turn to a discussion of how openness was afforded on the digital platform and, subsequently, what the consequences of such affordances might be in relation to the literature on architecture competitions and innovation theory.

The platform was designed to efficiently produce innovative proposals, but some of the platform's design features (e.g. the search function; the public, enduring wall) prompted standardisation of the uploaded proposals because when it was possible for crowd members to examine earlier work, we saw that they were inclined to imitate elements from earlier winning proposals. It could be argued that the concerns of efficiency and creativity (Kreiner, 2010a; 2010b) were not in balance when the crowd searched for inspiration in earlier winning proposals for their design solutions.

The platform was designed to encompass both competitive and collaborative practices "within" a competition format. This dynamic is similar to what happens in the new forms of dialogue- and workshop-based architectural competitions (Kreiner, Jacobsen and Jensen, 2011; Georg, 2015; Jacobsen and Kamstrup, 2017). With regard to the platform, the design of the hybrid form of competition was inspired by both online collaborative communities (Füller, Jawecki and Mühlbacker, 2007) and other platforms seeking to integrate competition and collaboration (Hutter, et al.,

2011). However, the Innosite platform was situated in the building industry, where the "architectural competition" is the prime example of how interactions between different actors play out, based on strong norms and traditions (Lipstadt, 2003; Kazemian and Rönn, 2009; Chupin, 2011). Therefore, it cannot be expected that this platform will work in the same manner as crowdsourcing platforms in e.g. IT, fashion or entertainment. Architects are accustomed to navigating in a very competitive environment when they compete for work. Empirical studies of architects' work in competitions have found that architects are continuously experiencing and confronted with dilemmas (Kreiner, 2009) and paradoxes (Manzoni and Volker, 2017) when they participate in competitions, because each competition is about developing a unique design that will be selected by a unique jury board (Rönn, 2009). The Innosite competitions were designed to establish, or at least build on, dynamics that the actors in the crowd did not accept: Peer evaluation and collaboration did not develop among the crowd members on the platform. One explanation was given by a part-time community manager (who was also attending architectural school) who said that "there are some dynamics that are unique to the building industry – already at school we learn not to share more than necessary [...] we are used to competing" (Interview 3).

One way of distinguishing between different architectural competitions is by categorising them as either "project competitions" or "idea generation competitions". In the former, the winning proposal is intended to be realised and built, whereas the latter is explicitly about widening the conceptual frame and the number of solutions to a given problem. The Innosite platform mostly hosted idea-generating competitions, albeit sometimes with assessment criteria such as "feasibility" or "realisation", and thus the proposals were also evaluated on whether they could potentially be realised and built. However, the position of the platform as primarily a digital-online idea-generation competition seems to have implications for how crowd members collaborated and shared (or did not do so). At one end of the spectrum is the invited project competition, where proposals are strongly linked to the architects proposing them, which means that the client will know something about the particular architect's capacity to follow through and actually realise the project. At the other end of the spectrum is the open idea-generation competition, where the proposals have no necessary link to a given architect's capacity to realise a project. On Innosite, where most of the competitions are similar to the open idea-generation format, crowd members are not only given the opportunity (through the general openness and transparency of the platform design) to be inspired by the work of others, but they can also appropriate such work without significant consequences, as the competitions rarely focus on the crowd members' capacity to actually realise their uploaded proposals.

Following this line of thinking – and the comments made by DAC officials

regarding the lack of innovative vision on the platform – we can pose an important question regarding how the online platform works and what it produces from an overall perspective. Is it an innovation platform or a *refinement* platform? In innovation studies, this has been framed as, for instance, "modular or architectural innovation" (Henderson and Clark, 1990) and "radical or incremental innovation" (Dewar and Dutton, 1986). We do not believe that it is possible to answer this question in advance, as it depends on how the concrete meeting of actors, platform, environment and affordances (Gibson, 1986) plays out, but it seems that Innosite became more a refinement platform than was originally intented.

We found in particular that the environment of the platform – that of the building industry and not least the architectural competition – greatly affected how the platform worked. We hinted at this when arguing that the platform was designed to include both competitive and collaborative practices 'within' a competition format. Based on findings from our case, we suggest that the online "crowd" should be reserved for platforms that primarily afford competitive dynamics and interaction patterns, whereas online "communities" should be reserved for platforms that afford collaborative dynamics and interaction patterns.

Conclusions

In this paper, we explored what happens when a crowdsourcing platform hosts competitions that resemble architectural competitions. We drew on Gibson to establish four affordances between the crowd and the digital platform. The first two affordances (easy to join the platform and relatively easy to participate in competitions) led us to conclude that the case study platform was open in the sense that it had a wide reach and that people who signed up understood how to participate in the competitions. However, the third affordance (crowd members focus on strengthening and positioning own work) underlined that the crowd had no interest in collaboration or otherwise engaging with the platform design, which originally aimed at encouraging crowd members to interact and work together. Following this, the fourth affordance (crowd members appropriate the work of other crowd members) showed how crowd members instead used the platform design to strengthen their own ideas, by borrowing and being inspired by previously uploaded proposals. To conclude, the Innosite platform succeeded in establishing a crowd of competition participants, but failed to establish collaborative actions between the crowd members.

Acknowledgements

The authors wish to thank employees at the Danish Architecture Centre for contributing with knowledge and for being part of the ethnographic study. Ursula Plesner from Copenhagen Business School and Anne-Laure Fayard from New York University both contributed valuable comments and input. Great thanks also to the journal editor and two anonymous reviewers for useful comments and feedback. The research was funded by the Realdania association, as part of Andreas Kamstrup's PhD research.

Empirical material

Innosite 2017: www.innosite.dk

Appendix A

Type	Description
Interview 1	Managing Director, HYVE HYVE designed the platform (March 2014, Munich)
Interview 2	Community Manager, Innosite, DAC Hired to 'groom' the online community (February 2014, Copenhagen)
Interview 3	Part-time Community Manager, Innosite, DAC Student assisting full-time community manager (May 2014, Copenhagen)
Interview 4	Project Manager, Innosite, DAC In charge of Innosite's economic aspects (August 2014, Copenhagen
In situ interviews	Several interviews with crowd members In-situ, contacted and conducted online (throughout 2014, Online)
Observation 1	General open-office landscape and online activities, DAC (Throughout 2013 and 2014)
Observation 2	Focus on community managers and their work (Throughout 2014)
Observation 3	Several internal meetings with high-ranking officers, DAC (Throughout 2014 and early 2015)
Observation 4	Test group established at DAC, including seven organisational members of DAC. (2012–2014)
Innosite, 2017	Screen dumps and quotes, www.innosite.dk (Accessed throughout 2014, 2015 and 2016; still online as of June 2017)

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Peter Holm Jacobsen is a postdoctoral fellow at Copenhagen Business School at the Department of Organization. He received his Ph.D. from Roskilde University at the Department of Human and Technology in 2014. Peter's work is mainly ethnographic. His research in the construction and design focuses on organization and management in the early phases of large projects. More specifically, he has studied novel dialogue-based interactions between client organizations, architects and users as a part of architecture competitions.