

Crowdsourcing to co-design meaningful social change

Abstract

Old Town Bari is the center of Bari City and the main city of Apulia region, in the southeast of Italy. For ages, it was a place neglected to its own community due to the high criminality level. This study follows a social innovation initiative launched by a young Bari collective to leverage education using crowdsourcing knowledge, in order to better understand how to develop crowdsourcing for effective social innovation.

To address this research question, the author conducted action research on a 12 days workshop, organized by the collective, in the Old Town of Bari. The workshop aimed to create a School Open Source with the help of the crowd, which was engaged on promoting and co-creating the social initiative. Furthermore the researcher collected and analyzed the online discussions, paths and topics from the days of the workshop to the opening of the School.

The study reveals how crowdsourcing acted as an opportunity to build a new community which revitalized the local social environment. The author also found that design processes played a major role on the community creation and instructed new governance models. Additionally, digital communications built a network, which is able to generate and regenerate the local socio-economical fabric and connect it with the rest of the world. These results indicate a first step towards a proposal for an open innovation model for social innovation which combines online crowd engagement with offline activities and where design processes nurture the sense of belonging between community and territory.

Keywords: crowdsourcing, social innovation, open innovation. co-design, network, education

Introduction

Open innovation strategies (Chesbrough, 2003) have provided a way for firms to increase the flow of new ideas coming from external sources. Recently, powered by advanced internet technologies, organizations are outsourcing their ideation efforts to large communities of individuals with widely diverse knowledge, skills, experience, and perspectives, in an attempt to bring fresh ideas into their innovation process (Howe, 2006). The study examines how such dynamics, like crowdsourcing (Howe, 2006), can reach societal goals. The study follows the creation of a School Open Source. The initiative aimed to achieve a positive social change in the Old Town of Bari, city unfortunately known for high criminality and low education levels of population. In the study we follow the dynamics and the mechanisms that relate the local reality with a crowdsourced community in order to form a new “community point of view”, which will allow citizen to engage in social change.

This paper addresses the following research question: how to develop crowdsourcing for effective social innovation?

Social innovation can glean new insights for their practice from the emerging literature on open innovation. On the other side, open innovation can be enrich by studying social innovation initiatives and its citizen involvement for social good beyond profit.

To explore the research question, the author conducted action research procedure with the use of participative methods for data collection, analysis and diagnosis. Furthermore, the researcher collected digital repertoires from the community to run a content analysis to follow online discussions, paths and topics. By combining action research reports, observations, outcomes from the crowd and digital repertoires clusters, the study highlights four major findings. First, this essay examines how crowdsourcing could represent the first steps to

create a supportive community, which will connect an isolated local node with a way more larger and connected global crowd; secondly, it is proposed that, in order to create a sense of community belonging, the combination between online and offline activities is needed and the use of design processes would serve in aligning the crowdsourcing community with the local one. The third and fourth findings concern the rising of a potential new governance models through a “learning by doing” approach where communication is enacted as an organization principle that keep people locally and globally engaged on the social challenge.

The study aims to contribute to open innovation literature on an empirical level by sketching an open social innovation model that combine online crowd engagement with offline activities and where design processes play a major role in nurturing the sense of belonging between the community and the territory.

Theoretical Background

The concept of open innovation, which Chesbrough (2006) defined as “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively” (p. 1) focused primarily upon the private benefits of innovation. Therefore, prior research tended to overlook its impact outside of the private sector (Chesbrough et.al 2014). According to Bommert (2010) there are fundamental differences to be considered in studying innovation on private and public sectors. Open innovation in private sector tends to focus on new product development to achieve competitive advantage and add value in terms of higher revenue. By contrast, innovation for public sector has to focus on non-tangible artifacts (eg. services), is driven to improve service performance and adds value in terms of public benefit. These differences highlight the need to

better understand what are the dynamics and mechanisms which open practices could support when the ultimate goal is social innovation.

Social innovations are innovative solutions to problems in society that mobilize ideas, capabilities, resources, and social arrangements required for sustainable social transformation (Alvord et al., 2004). Across the world during the past decade, there has been an increasing interest in social innovation as a way to achieve sustainable economic development (Dawson and Daniel, 2010; Graddy-Reed and Feldman, 2015) and claim for a more responsive role of governments to address long-standing social problems (Mulgan 2007). In particular social innovation literature (Ramirez, 1999; Wyngedouw, 2005; Moulaert et al,2005) claims and encourages the involvement of end users or beneficiaries in the innovation process. User involvement refers to users developing or actively contributing to implement social innovation; in other words, co-creating value with social innovators. Therefore, in order to co-create, there is a need to include different types of activities, actors, beneficiaries, tools, themes, objectives, rules, frameworks as well as new challenges and strategies (Bortagaray and Ordóñez-Matamoros, 2012).

It is acknowledged that the diffusion of technological infrastructure and its usage has been fundamental to enable user engagement (von Hippel, 2005). The rise of new open innovation processes, such as crowdsourcing (Howe 2006), has provided organizations with new ways of engaging with an online, distributed collective intelligence, which serves specific organizational goals (Enkel, Perez Freije, & Gassmann, 2005; Kristensson, Magnusson, & Matthing, 2002; Brabham, 2013). While crowdsourcing is a promising way of improving innovation capabilities, organizations are challenged to understand new mechanisms to form effective and stimulating partnership with online communities (Bodureau and Lakhani 2013, Poetz and Schreier 2012, Afuah and Tucci 2012, Kraut et al. 2012), in particular when

aims to achieve societal goals (Bornmann,2012). Social innovation literature provided limited discussion regarding the value of online communities in prolonged periods of times and how it can be leveraged and replicated.

In this paper, the author investigates crowdsourcing in its open collaboration form (Levine and Prietula 2014; Baldwin and Von Hippel 2011), where the final outcomes are the results of collaborative effort of all crowd members. Consequently, the research question is how to develop crowdsourcing for supporting social innovation?

The purpose of this paper is to advance the scientific understanding of the factors that influence crowdsourcing for societal impact and how digital technologies could support it.

Research Method

In this paper, we report findings from an in-depth interpretive ongoing study of one initiative, the creation of a School Open Source (SOS), run by a young-collective (13 members) that designs for social innovation in the city of Bari, Italy. The young-collective aimed to design a new kind of school to culturally support an underdeveloped part of the city by leveraging on the potential of distributed knowledge. Therefore they organized a 12 days workshop (X,Y,Z) in Bari, where three different groups co-designed the identity (X), the tools (Y) and the processes (Z) for the SOS.

To explore the research question, the author conducted action research procedure with the use of participative methods for data collection, analysis and diagnosis. Hult and Lennung (1980) defined action research, as an approach that “simultaneously assists in practical problem-solving and expands scientific knowledge” (pag.242), therefore the author was involved as a faculty member and led one of the three activities (Z). The author main role, during the workshop, was to facilitate and enhance the competencies of the group actors, engaged in a

process of mutual learning. The workshop was performed collaboratively and the author shared the responsibility of its outcome.

This methodology seemed appropriated to allow the study of interconnections, interdependencies and the dynamics of a total functioning system rather than isolated factors. A deliberate attempt was made not to divorce phenomena from the environment, which gave them meaning.

Research Setting: the School Open Source project

A young-collective based in Bari, in 2015, presented for a social innovation national competition sponsored by “Che Fare”- Italian social innovation incubator - an idea aiming for a cultural renaissance of the Old Town of Bari: a School Open Source. The idea was to build a space, physical and virtual, where “the education will be open and accessible to be a lever for social change, which will allow Bari to become a better place for living”. It was necessary to bring open and new education where both standard institution and governmental project were not able to penetrate. This was particularly relevant in areas, like old Town Bari, of prolonged cultural stasis due to scarce individual, entrepreneurial and governmental investments.

The city of Bari is the main city in Apulia, an Italian region of approximately four million inhabitants in Italy. The original city center, known as “Bari Vecchia”, has been since years one of the basis of organized crime in Italy. In particular youth criminality raised a lot in the last decade. A culture of illegality is widespread and it is so diffused that sometimes young criminals do not even know that their activities are illegal.

This ambition idea of the School Open Source encompasses 4 issues: education, research, co-living and spin-off. The initiative aims for: a physical space to allow people to meet and exchange knowledge; an education program to nurture new professional skills to create new

job opportunities; a look at the research and academic environment to feed the educational requirements. The project addresses the local need for new international knowledge, in order to foster future opportunities for the population.

“Che Fare” received 700 projects and activated a public online vote mechanism to shortlist 40 projects. The project entered in the shortlist and after subsequent evaluation it ended up being one of the three projects founded by “Che Fare”.

As soon as they got the approval, in December 2015, the collective activated their extensive network to crowdsource participants and teachers for activating the workshop, with the aim to co-design the identity, the tools and the processes of the School Open Source. The young collective went on an Italian-universities tour (Bocconi, Firenze Isia, Urbino Isia, Milano poli) and FabLab (density design studio, Fablab Torino) to present, explain, receive feedback and recruit resources. At the same time, they enforced their virtual identity by posting all the initiative, video, thoughts and developments, and by receiving encouraging endorsements from intellectual and well-known international public figures.

In June 2015, for one month, the collective opened an online call to participate at the workshop. The only requirements were to submit a CV and the willingness to make the idea, the Open Source School a reality.

The collective received more than 200 applications and selected 60 of them.

In July 2016 (18th-30th), selected participants, instructors and tutors flew over to the Old Town of Bari to work together at the triple co-design workshop XYZ for 12 full days, for free. The workshop connected 24 internationally renowned instructors and tutors (mostly with an expert design background) and 60 participants. Participant’s ages ranged from 22 to 72, with an average around 30, with different skills (makers, community creators, computer-expert)

and diverse backgrounds (from business students, artists, communication and product designers, entrepreneurs, to engineers and computer science researchers).

Participants autonomously split by interest within 3 sub-themes: identity (X), tools (Y) and processes (Z). Each of the sub-themes was coordinated by one/two instructor/s per week, 4/5 tutors and one member of the young-collective. All of the outputs from the workshop represent the inputs for the School Open Source, that presented its first offer to the general public in November 2016.

Data collection

As action research protocol suggested (Hult and Lennung,1980), the action researcher performed reports within the system and followed the process of the social system under study. The author also took part in the implementation of findings from the project, by continually interacting with the young-collective in the following months. Therefore during the event, the author collected the data as a participant observer and through a series of open-ended conversations with participants, founders of the collective, teachers and tutors. Notes were transcribed daily during the 12 days and the conversations were used to triangulate the information. In order to improve the validity of the findings (Eisenhardt 1989) data from multiple sources were collected (Tab1): workshop participants, collective members and “Che Fare members”. The researcher gathered descriptive data about participants and founders and the outputs from the workshops: three general reports per each sub-themes (X,Y, Z) and 8 specific outcomes from sub-theme Z, which was divided in 8 groups of 3-4 people each. The specific outcomes are presentations, pictures and prototypes developed during the Z lab.

Digital repertoires actions were also collected: the XYZ Facebook page (with 476 posts) and the School Open Source website with reports (10), shared documents (12) and feedback forms

(2) from the community is continuously tracked. In order to map the different point of views, author monitored also each participant personal blog and press.

Finally, to correctly triangulate the information, the author conducted a series of post-workshop interviews to the young-collective, to better understand how they were processing the outcomes from the workshop to realize the School.

insert TAB1

Data analysis

The author used an interpretive approach (Orlikowski and Baroudi 1991; Walsham 1995b) to analyze the data and create a report of how the young-collective dealt with crowdsourcing.

During the XYZ workshop, the author reported, real time, actions and feedbacks in a cyclical process aiming at an increased understanding of a given social situation, the School Open Source creation. Then, the interpretation and analysis of these data were undertaken in collaboration between the action researcher and the young-collective by continuous interactions.

The analysis, started at the end of the XYZ workshop (August 2016), when the author wrote descriptive stories (Langley 1999) to be shared with the young collective and with the community that participated at the workshop. The following step was to iterate between their feedback on the data, the data collected and the theory to bring clarification to emergent themes and constructs (Charmaz 2006; Glaser and Strauss 1967).

The first round of analysis developed an initial understanding of observations field notes and digital action repertoires. In particular, the author focused on the activities and the mechanisms that supported the engagement and creation of a crowdsource community.

We analyzed tools and mechanisms enacted before and during the XYZ workshop. We analyzed internal data on the content (like reports, blog posts, Google shared documents) and CVs of the people that signed up. The analyses, then, were discussed in concert, with the aim to develop a holistic understanding of the setting and the criteria for selection of participants. The author developed a narrative account (Pettigrew 1990) of how the School Open Source was created by participants and what was the relation with the initial young-collective - e.g. how they approached the innovation tasks, what steps they took, and what activities they enacted on the projects.

The second round focused on the values as manifested (with text) by the young-collective and the digital community. The second round was conducted from September, to understand, through the digital network, how the young-collective enacted the crowdsourcing project, and therefore how The School Open Source will be taken to life in November. A quantitative content analysis (Krippendorff 2004) was run on all the 467 Facebook posts. Words frequency, concurrency and semantic analysis (Krippendorff 2004) were tested to investigate common themes and semantic relations. The goal of the content analysis was to identify, summarize and represent the specific traits of the text and develop quantitative measures to compare them. During this phase, the author collected also six interviews from key members of the young collective to triangulate information.

Findings

Crowdsourcing as opportunity to build a new community

Even if the founders initially relied just on small collaborative teams of design experts (teachers and tutors), the constructions of, and responses to, the crowdsourcing possibility

was very revealing. Instead of using crowdsourcing as an “alternative innovation system” relying on untrained people, the young-collective saw an opportunity to invite and consequently create a community of creative, and highly motivated, individuals to generate new knowledge on social challenges, and actively experiment with, adapt, and implement the new practice. This opportunity translated in the 12 days workshop, where an online crowd with different backgrounds and experiences, were totally immerse in a multidisciplinary approach based on cooperation and skill exchange. Some participants during interview reported this experience as “This (workshop) experience will end as a new beginning”, “We found together new forms of collaborations, to write together a new story”, and “It was amazing the way we interacted and we created new relations among us and within the territory”

Community creation: a role for design processes

When the context changes from firms engaged in open innovation processes to citizen participation for social innovation, some new challenges rise.

Firms innovation and social innovation through crowdsourcing are not the same thing. What makes the open innovation model relevant to social innovation is the notion that both processes look beyond the boundaries of the sponsoring entity. When crowdsourcing works for social innovation coordination problems among numerous aims and other interests rise.

The strength of crowdsourcing is to engage diverse and diffuse crowd with different knowledge and creativity. However, this creates a multiplicity of point of views, which are destructive if there is no convergence towards a specific goal.

Participants from sub-themes X, Y and Z run the labs in different ways. Group X decided, with a group manifesto, to vote for every step and every decision, while, group Z was structured in 8 groups, each responsible for its deliveries but led toward the same

methodology (“design for service”(Kimbell, 2001)) with an expert facilitator. Group X encountered a clash during the delivery phase, where the multiplicity were unable to converge on a joint point of view. On the opposite, group Z were able to deliver 8 different outcomes around a very complex matter: the future processes of the School. Therefore, the study highlights the great role of “design for service” methods, which gave structure and tools to the workflow without limiting their creative autonomy.

From this experience two emergent mechanisms raised. First, design practices forced participants to translate ideas into tangible outcomes, to share and visualize them. Participants needed to represent the relational and temporal nature of the processes in visual form, which was a way to deeply understand and engage all group members on a shared perspective.

Second, design practices created opportunities for all members in each group to take part in the enquiry and invested resources in creating material artifacts and situations that will enable the processes of the School Open Source (SOS). An example was an extemporary event organized by one of the Z groups: the open night. The group identified that the population of Bari did not know much about the SOS initiative, therefore, in less than 2 days, the group design an open public evening where people could meet the “future” offers of SOS for the first time. An important part of their work was the construction of artifacts, such as promotional gadgets (SOS bags), demos (3d printer demo objects) and customer journeys (to have conversation about open points with the citizens), to make SOS services, visible and comprehensible. Those mechanisms suggested design as a constructive process, to overcome singularity and involve crowdsourced members on creating a new “community point of view”, which could lead to a better social impact by including other stakeholders, such as citizens and social contexts. Those mechanisms created a sense of belonging and helped the young-collective with decision-making in following steps, one of them said “ the results of

this workshop are in front of you. We will be able to open (the SOS) in November, thanks to its community”

A new governance model challenge

The crowdsourcing model for social innovation encountered immediately some challenge in governance. Who, where and when the decisions should be taken? Before, during or after the X,Y,Z workshop? By the crowd sourced communities or the founders?

In an open innovation context, system boundaries are mostly unclear and actor preferences are both heterogeneous and evolving; consequently the goals and the purpose are likely to remain continually moving targets (Rindova & Kotha, 2001). This dynamic challenged the community during the X,Y,Z workshop.

The initiative adapted to this challenge by proposing a non-centralized entity, where the decisions could be shape by the crowdsourcing community and by each single constituent workshop. Each sub-theme produced crucial components (the identity, the tools and the processes) and the founders had the mission to link and share the knowledge among those groups, with the mutual understanding that every approach is provisional and perfectible, not definitive.

The idea of the workshop did not aim to product exhaustive, fully replicable characterization of the service SOS will provide. It was a “learning by doing” mechanism with the intent to experiment and indicate the feasible goals and set of means for obtaining them. Thus, the early characterization of means and ends provided not just starting point but also basis for organizing exchange of experiences among collaborators. The exchange, in turn, results in learning that allows adjustment after the workshop. The community is still very much

engaged on finding new possible governance forms. After the workshop ended, this was one of the most debated topics by the Facebook community, as confirmed by the content analysis.

The role of communication as an organizing principle

The inductive analysis on this phase suggested that, in developing the responses to a new IT-enabled practice for pursuing novel insights – crowdsourcing for social innovation – the young-collective exhibited a strong commitment to a distinctive attitude toward knowledge generation.

In our observation we identified three attitudes towards digital repertoire. An initial attitude where IT was fundamental to engage the community, a second, during the workshop, where technology was almost distracting people from the goals, and a third after the workshop where it became a way to reflect on what was done previously.

The researcher observed that the use of web-based participation was seen more as a complement to traditional approaches for user involvement, rather than a mere replacement. Web platforms, during the development of the project, were working as repositories for process steps and ideas; instead face-to-face conversations and physical enactment of the concepts were tools to take the concept to the next step. The idea of “making” and to prototype ideas through physicality complemented the possibility in short time to combine different skills and distant knowledge. Participants used physical artifacts, like drawings, storyboards, prototypes and visual maps, to support their conversations with the young-collective and the citizens. As mentioned, one of the Z groups took this conversations further and organized an “open night” to prototype how the SOS could be perceived by the territory. Many Bari Vecchia citizens were there and we note surprising success in communicating complex ideas with simple artifacts to the public. Citizen, during those conversations were

expressing their own willingness and life experiences. The exchange between citizens and participants led us to see interesting possibility to involve the local community and in the role of communication as an organization principle to better fit the local demand.

Discussion and implications

Our results contribute to the understanding on open collaboration for social innovation. This study investigates the question *how to develop crowdsourcing for effective social innovation*.

The research aims to increase the understanding on the factors that influence crowdsourcing in public sector and the role of digital technologies for open innovation in public context.

The study draws on open innovation literature (Chesbrough 2006) by empirically examine a social innovation initiative for Bari Vecchia: the creation of a School Open Source. The author illustrates the story of the X,Y, Z workshop and the online and offline dynamics through which the School Open Source become a reality. These dynamics expanded the empirical knowledge on Social innovation initiatives.

The complex relationship between the multiplicity of actors (workshop participants, young-collective, citizen) involved was salients in the initiative studied. Crowdsourcing was the first step on building a diverse community, led by the goal of pursuing actions for social change, in Bari Vecchia. However our study identified a strong complementary between online and offline actions. The X,Y,Z workshops fostered the relationship between the actors to create a new “community point of view”, which continue the conversation, later, online to promote innovation on a local dimension.

A constructive, *in situ*, exchange between different kinds of actors helped to identify and define problems and challenges in ways that captured their complexity and developed new,

viable strategies for dealing with this complexity. Collaborative interaction facilitates trust-based circulation and cross-fertilization of new and creative ideas, and ensured a broad assessment of the potential risks and benefits of new and bold solutions and the selection of the most promising ones. The “design for service” method, used in particular in the Z workshop, allowed participants to structure their conversations, to better understand and align the ideation phase, and to engage with the need and the skills of the territory, where they want to have impact for social change.

Finally, the implementation of the new solutions will be facilitated by resource exchange, coordination and the formation of joint ownership (Sørensen and Torfing, 2011) as we have seen on the ongoing communication through the Facebook channel.

The key argument in favor of enhancing collaborative innovation in the public sector is that multi-actor collaboration, when guided, ensures that public innovation draws upon and brings into play all relevant innovation assets in terms of knowledge, imagination, creativity, courage, resources, transformative capacities and political authority (Bommert, 2010).

With this study we add empirical evidence on the need to complement the online engagement with offline reinforcement in order to create new forms of partnership and ownership, and to enhance social innovation through cross-disciplinary collaboration.

The small scale of the project and, at the same time, the high interconnection with a new and globally distributed community allows the project, on one side, to be highly rooted in the local place, and on the other to embrace the global flows of ideas, information, people, which together generate a new sense of place. As such, places are no longer isolated entities, but rather nodes in both short and long-distance networks, where the short networks generate and regenerate the local socio-economic fabric and the long ones connect a particular community

to the rest of the world. With this study we take a first step towards a proposal for an open innovation model for social innovation.

Limitation and future research

The implications need to be considered in light of the study limitations. First, the findings are based on a case which is still ongoing, therefore the social impact in Bari Vecchia was identified by the active observations of the authors, which might limit the relevance of the study. In a longer period of time, which is in the aim of the study, the social impact will be better verified. A future research direction would be to examine the actions and the participation from the territory. Additionally, the development and the involvement of the online community has to be taken in consideration to better identify implication for new governance models. Future research might explore how digital interactions will support the local impact and how this model could spread and be replicated in other contexts and territories.

Conclusion

The findings aim to demonstrate how crowd source collaborative innovation helps to overcome the restrictive organizational and cultural aspects of public sector innovation (Bommert 2010) by designing a complete new concept, the Open Source School, in order to realize a systemic change, a shift from vertical hierarchical systems to distributed ones.

We bring evidence on the fact that this shift asks not only for a technological change but also for a cultural one. Technology had the role to interconnect diverse people with many different skills, however to have a social impact on the territory design method and physical proximity allow the alignment with the territory. Still, it will be interesting to verify the long term impacts and reactions from the locals. The SOS initiative has the potential to be of vital importance for a territory like the Old town in Bari, which unfortunately is mostly known as a neglected area of the city, and the author will be involved on a better understanding in the long run.

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TABLE 1 Summary of data collection

Stakeholder	Method of collection	Number	Time period (2016)
Participants (P) at the workshop	Open ended conversations;	43 (from 20 min to 1 hour)	July - August
	Facebook posts	403	July- Oct
	Reports	10 (1report groupX;1 report group Y; 8 reports group Z)	July- august
	Digital feedback forms	2	August- Oct
	personal blog/articoles	3	August
Members (M) of the young collective	Semi-structure interviews	6 (1 hour each)	Oct
	Facebook posts	73	July-Oct
	Website	1	August- Oct
	Shared documents	12	June-Oct
Members of “Che Fare” organization (Cf)	Semi-structure interview	1 (1 hour)	Oct