Build It and They Will Come: Analysis of an Online Deliberation Initiative

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Public and private investments are increasingly being directed towards the development of ICTs for the construction of more inclusive and connected communities. Labelled as Collective Awareness Platforms (CAPs) under the European Seventh Framework Program, these initiatives explore the possibility of tackling societal issues relying on digitally-mediated citizen cooperation. As their diffusion increases, it is important to critically reflect on the extent to which they can effectively trigger forms of engagement and sustainable collaboration within and through digital artefacts. Among the associated risks is the furthering of a technocratic understanding of how collaborative processes work, based on the assumption that the introduction of CAPs would be a sufficient condition for the construction of inclusive and engaged communities. In this respect, this contribution investigates a case in which a digital platform was implemented with the aim of promoting citizens' deliberation on urban-related issues. This experiment is analyzed by 1) assessing whether the platform functioned as a deliberative space; 2) tracking the negotiation processes of the digital artefacts' functionalities occurring among initiative's organizers, platform developers, and participants. The goal of the paper is to understand how different understandings and unexpected usages of the digital platform affected the deliberation process and therefore the initiative's outcomes.

Keywords: Online Deliberation, CAP, Civic Engagement, Smart City, Social Innovation.

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Introduction

Over the past twenty years, the commercial Internet has undergone a profound transformation. From a network through which retrieving and sharing information, potentially turning *'every author into a publisher'* - as Vinton Cerf argued in the forewords of one of the first Internet manuals ever published (Gilster, 1993) - to a communication infrastructure fostering participation, interactivity and social networking (Flew & Smith, 2014, p. 21). The shift to the so-called Web2.0 paradigm in the early 2000s (ibid.) not only brought a quantitative escalation in the amount of circulating data, but also to a substantial change in the design and use of technologies. Indeed, this shift was accompanied by the emergence of new applications, which exploited the network effects of the Web, trying to harness the crowds collective intelligence (Flew & Smith, 2014, p. 21). From Wikipedia, to ReCaptcha through to GalaxyZoo and OpenStreetMap, the meaning of *participation* has been changing constantly, and so have the contexts in which these supposed *participatory* technologies have been employed.

Online civic engagement is one of those contexts which has seen a prolific development of participatory applications. This loosely defined field is composed of projects, artefacts, associations and practices that leverage on the collaborative power of the Web for addressing social challenges (Bria et al., 2014). Such cascade of innovations has so far generated more than one hundred digital tools and methodologies tested in over four hundred civic-engagement initiatives worldwide (Fung & Warren, 2011). Examples are urban experiments such as Participatory Chinatown in Boston[20] (Reed, 2014, p. 124), MiMedellin in Medellin[21] (Colombia), TalkVancouver in Vancouver[22] (Canada), and large international projects, such as those promoted by the Icelandic Citizens Foundation[23], or the recent crowdsourcing initiative aimed at drafting the new Mexican constitution.[24] From virtual town hall meetings, to citizens consultation experiments, participatory budgeting and collective urban planning, these projects have prompted public institutions, private companies, NGOs, and the civil society organizations to further experiment with new usages of ICTs for the construction of inclusive, digitally connected and sustainable societies (Bria et al., 2014).

Given the popularity that these initiatives have gained over time (Pacini & Bagnoli, 2016), it deems necessary a critical and reflexive evaluation of the role ICTs have played in such projects, the models of participation they promoted, and the ways in which these technologies have been appropriated by citizens. This evaluation can be helpful to collectively make sense of what has been developed to date, and of what kind of reactions these initiatives have raised among the public. As part of this reflexive process, this paper employs David Lane's (1995) theory of technology adoption and innovation. This perspective furthers a conception of ICTs as underdetermined objects (Feenberg, 1999, p. 79), whose meanings are open to multiple, and even contrasting, interpretations emerging from the interactions that they have made possible (Bijker, Hughes, & Pinch, 2012, p. 34). Therefore, when defining and evaluating the effectiveness of online civic engagement initiatives, the complexity of technological appropriation cannot be overlooked, as it is inherently uncertain.

This paper is based on a case study performed in 2014 in the city of Cesena, Italy. During a one-month project, an online platform was designed to allow citizens to contribute in one of

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[20] http://www.participatorychinatown.org/
[21] http://www.mimedellin.org/
[22] https://www.talkvancouver.com/
[23] http://www.citizens.is/
[24] https://www.constitucion.cdmx.gob.mx/

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the candidate mayor's future agendas for the years 2014-2019. Three groups of agents gravitated around, and projected their expectations towards, the new digital platform: (1) *developers*, (2) *organizers*, (3) *participants*. Information about the groups' attributions towards the tool, and its actual use by project's participants was gathered by means of interviews, participants observation, and secondary documents analyses. The aims are to understand to which extent this initiative was capable to create a deliberative space, and how the platform's functionalities had been negotiated among groups.

The paper is structured as follows: the ensuing background section combines two theoretical rationales, online deliberative theories and studies on the emergence of artefacts' functionalities. The former provides an operational definition of deliberative processes, drawing concepts from theories on democratic conversation and strong democracy. The latter traces the complexity of interaction processes through which agents come to imagine new uses of available technologies. The data analysis combines a qualitative analysis of interviews, participants' observations notes, and secondary documents related to the tool's development and implementation, with Social Network Analysis and descriptive statistics, displaying the participants' types of interaction within the platform. By framing data through the theoretical lenses, the discussion and conclusion part show some of the shortcomings of technology-mediated engagement initiatives, further defining an agenda for future research.

Theoretical background

This paper is rooted on two theoretical rationales. Deliberation theory, inspired by the writings of James Fishkin and John Gastil (Fishkin, 2009; Gastil, 2008), provides an operational definition of deliberation, which is later employed in the analysis section for the evaluation of the case study. Instead, Lane's approach to innovation and uncertainty (D. A. Lane, 2011, 2016, D. A. Lane & Maxfield, 1995, 2005) is used to make sense of the initiative outcome, by focusing on the misalignment between the functionalities inscribed by design on the platform - negotiated between developers and organizers - and the participants' actual use of it.

An introduction to Deliberation

Providing a single universally accepted definition of deliberation is challenging, since the topic has been addressed by several and often incommensurable viewpoints. The *Rational Choice Theory* perspective considers deliberation as a process in which a defined group of agents, endowed with an immutable set of preferences, analyzes a causally independent number of alternatives for a given issue, with the objective of generating an ordered list of viable solutions. Such a view stems from a *liberal conception* of deliberative democracy, according to which public reason emerges from the aggregation of personal interests within an institutional framework designed to foster and control these confrontations (Mouffe, 2000; Rawls, 1993).

Instead, theories of *democratic conversation* and *strong democracy* describe the deliberative process as discursive, open ended, inclusive and free flowing. Deliberation is a discussion characterized by an informal dialectic, in which talk does not chart distinctions, but rather creates commonalities amongst participants (Barber, 2003). This approach traces its origins in *Critical Theory*, from the writings of Habermas (1985) until the recent studies of Dryzek (2000). According to the latter, deliberation is a means of achieving an informed decision, and a process along which participants become aware of the dimensions involved in the issues at stake (Dryzek, 2000). It is first of all a discovery and learning process, rather than a method for achieving a rational consensus on universal principles (Mouffe, 2000, p. 73).

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To summarize, while the liberal approach deems deliberation as a tool for aggregating and streamlining collective decision-making, the critical perspective highlights its capacity to collectively uncover the latent dimensions of the problems under public scrutiny, which were not necessarily taken into consideration by single individuals.

In this paper, the term *deliberation* is used in accordance with the definition provided by John Gastil (2008). His description, while maintaining a critical perspective, is schematic enough to allow a clear operationalization of the process for the analysis. A deliberative process begins with the creation of a knowledge base, i.e. a set of background information on the issue under investigation that participants are invited to analyze, fostering in this manner a first shared understanding of the problem. This information base is created by the promoters of the deliberation, or by an appointed committee, which usually combines professional expertise with personal experiences (Gastil & Black, 2008). Subsequently, each participant should identify the values at stake (equivalent to the dimensions aforementioned) and formulate potential solutions to the problem. In opposition to the liberal conception of deliberation, values and solutions are not pre-given and composed of a fixed input to which each participant contributes. Rather, solutions emerge and change throughout the deliberation process, as a consequence of confrontation. During this phase, participants are supposed to develop an *enlightened understanding* of the issues at stake and of their own perspectives, at the same time empathizing with the hopes, fears and motivations of others (Gastil, 2008). Through the informed and reflexive comparisons of solutions with values, a trade-off for each option is identified and evaluated by participants, thereby generating a list of prioritized solutions. A final decision on which solution to adopt is achieved either by mutual agreement or through a poll, depending on the context. During elections, for instance, the final decision is based on participants' votes, while in other situations the deliberation might culminate with the production of a set of recommendations representing the participants' irreducible viewpoints.

A bird's-eye view of this convoluted process would reveal two main components: the *opinion creation* and the *opinion aggregation* stages. The former is the collection and comparison of participants' values and solutions; the latter regards the reconciliation of different ideas into a single final agreement (Fishkin, 2009). This deliberative scheme can be applied to several contexts, from small organizations to web-based communities, up to local and national scales. In an ideal situation, mass participation would allow community members to actively contribute to the deliberative process, granting political equality through their engagement in the opinion formation and selection processes. However, the scale of the initiative matters: to have an enlightened understanding of the potential solutions to a problem, all participants should explore the others' values. This means that the larger the participants number, the greater the amount of information each of them must evaluate to come up with an informed opinion. Fishkin (2009), argues that medium and large-scales deliberation (i.e. more than 200 participants) is affected by *rational ignorance*, i.e. the tendency to avoid a systematic inquiry of the issue under investigation when the amount of information to be considered outstrips the individual capacity for elaborating it. To overcome these limits, democratic institutions often rely on simpler forms of members' involvement (e.g. referenda, polls), directly engaging a community in the decision-making process. However, if in democratic contexts these solutions may grant political equality, they often fail to stimulate a systematic reflection on the issue at stake, by removing the *opinion formation phase* and by considering citizens' votes as an approximation of informed decisions.

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In light of this, the gap between deliberation and participation seems unfillable. However, can the introduction of new communication means extend the *opinion formation stage* to larger groups? Since its inception, Internet has been a place for deliberation, in the prosaic meaning of the term. E-mail, mailing lists, bulletin boards, online chats, forums, instant messaging and lastly social networks: the history of Internet is punctuated by the appearance of digital artefacts that have increasingly enlarged the public involved in online conversations. Thanks to the development of protocols, interfaces and connections, Internet has prepared the ground for strong deliberative communities (in the critical acceptation of the term) to flourish. From the cybernetic utopia of the 1970s (Medina, 2011), to the democratic dreams promoted through the pages of the People's Computer Company (Dean, 2005), to the emergence of Web2.0 in the early 2000s, there has been a gradual experimentation in the field of computer-mediated engagement supported by both governments and private organizations (Fung & Warren, 2011).

Sustein (2001) was among the first scholars to analyse this phenomenon and to warn against the drawbacks of online communities. Internet stimulated the adoption of deliberative behaviors, and allowed people to interact, but at the same time it fostered group polarization, extremisms, and the emergence of an enclave form of deliberation carried on by a group of close-knit members (ibid.). Through participants' self-selection and ideas' homogenization, enclaves may endanger the possibility for users to engage in an *enlightened understanding* of different positions and opinions. Sunstein's hope for a deliberative Internet relied on the possibility that hyperlinking would put these enclaves in communication, easing the migration of users from one community to another and thus increasing the heterogeneity of ideas. Today this vision appears to be no longer actual, since the emergence of social media has redefined the same concepts of online participation and collaboration, less relegated within rigid enclaves, but rather fluid and extemporaneous as the connections amongst activists collaborating within a social network (Rheingold, 2010).

However, recent models of participation have often been approximations of the deliberation funding principles, leveraging on participants' gut feelings and boiling down motivations and ideas into one, single, click. In their simplicity, initiatives like digital petitions and online polling systems have sometimes achieved wide visibility but, lacking the *opinion formation stage*, they have failed to stimulate deliberation in its critical acceptation, and in some cases, they have led to depoliticized forms of participation (Dean, 2005).

A theory on technology adoption and innovation

To understand the complexity of technological appropriation processes and their consequences in terms of the emergence of new artefacts' functionalities, we rely on the *innovation theory* developed by Lane and Maxfield (1995, 2005), further explored by Russo (2000), Villani et al. (2007) and Read et al. (2008), among others. According to Lane (2016, p. 2), 'Innovation processes inextricably entangle the introduction of new artefacts[25], transformations of social organization, and changes in attributions people make about the identity of agents (i.e. both individuals and organizations) and the functionality of artefacts'. This theory argues that the functionalities of an artefact are not unilaterally and once and for all determined by its designers. Indeed, they are the outcome of a negotiation process during which designers' materially inscribed attributions of functionality are interpreted by

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[25] By *artefact*, Lane and Maxfield mean any object or service around which economic activity is organized— in particular, those designed, produced, and exchanged by economic agents. *'"Objects" are not intended just as cars, movies, and telephones, but also as software systems, architectural blueprints, and financial instruments'* (Lane & Maxfield, 1997:170).

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participants and then further translated and put into actual uses. These negotiation processes occur in *cascades*, since they can cause iterative sequences of changes in agents' identities (what they do and how they do it), artefacts' functionalities (their uses, who uses them and for which purposes) and in the relationships amongst agents and artefacts (D. A. Lane & Maxfield, 1997, p. 192).

The negotiation process unfolding from the introduction of an artefact can be synthetized as follows. At the beginning, the new artefact (material/immaterial) is designed to address some attributions of functionality (including what it should be used for, by whom, and how), which usually reflect the designers' views. When the artefact is introduced in a specific context (*space*), this may generate patterns of interactions around its use, not only amongst agents, but also amongst artefacts (e.g. new complementary technologies or adjustment of existing ones). These patterns can subsequently modify and alter the meaning(s) of the artefact's uses, generating new attributions of functionality. All along this cascade of changes, the recently attributed functionalities may activate different uses of a particular technology, serving as a basis for the development of artefacts designed to fulfil them (Bonifati, 2010; Villani et al., 2007). The cycle reiterates when these novel artefacts are again introduced in the *space* (D. A. Lane & Maxfield, 2009). The recursive process through which an artefact is exploited to fulfil functionalities and needs not previously considered as relevant is called *exaptive bootstrapping* (D. A. Lane, 2011), and it has an inherently unpredictable nature: agents cannot foresee which attributions will gain relevance along the unfolding cascades of consequences resulting from their own and the others' actions. An example of this process is the French telephone system Minitel (Feenberg, 1992). In the early 1980s, the French government distributed, for free, millions of video terminals to telephone subscribers. Once connected to the phone line, the Minitel terminal allowed everyone to access information services. However, one year after its introduction, people realized that it was relatively easy to *hack* the system. Therefore, they turned an apparently boring information terminal into a means of communication. Eventually, the symbol of French modernization became an on-line chatting system, used to look for amusement, companionship, and sex (Feenberg, 1999, p. 126).

It is important to notice that even acknowledging the possibility for a participant to recognize the emergence of a new attribution of functionality associated with an artefact (D. Lane, Pumain, van der Leeuw, & West, 2009, p. 29), the current formulation of this innovation theory does not explore in details the mechanisms through which a *functional novelty* is shared and accepted as relevant by the group of participants involved in the interaction patterns around an artefact (i.e. how users negotiate and influence others' attributions of functionalities, and how attributions diffuse and are enacted through use). To widen the scope of the theory, this research studies the processes of negotiation and emergence of functionalities in a context – such as an online deliberative platform – that is both a shared artefact and an interaction space. Differently from previously analyzed cases of *bootstrapping dynamics*, digital artefacts allow users' attributions of functionalities and actions to be self-evident and intelligible in the same moment they interact within the digital space.

Empirical study

Case study: an online deliberation project

In February 2014, the city of Cesena, a mid-size city located in Italy with approximately 95.000 inhabitants, launched an initiative aimed at engaging citizens in the co-construction of the political agenda of the then-mayor who was running for re-election. Citizens were asked

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to collectively substantiate the seven lines of actions, chosen by the mayor and his staff. These lines were aimed at constructing a more secure, transparent, fair and cohesive city. In detail:

- Public services: This area was open to ideas on how to improve or change the essential urban public services, to make it more respondent to citizens' needs. Some of the citizens' proposals concerned public health services, social housing and public schools.
- Technology and innovation: How to improve the city's life quality by means of technological interventions. Some of the ideas discussed suggested the extension of the public Wi-Fi network to the peripheries, the extension of the door-to-door garbage collection to the entire city, and the digitalization of basic services (e.g. register office).
- Security: This debate was aimed at collecting ideas on how to improve the city's security. The discussion led to the proposal of new bike lanes and the improvement of existing ones, to reduce car traffic and some of the associated dangers. Citizens also asked for an increased level of police surveillance in the peripheries.
- Participation: This line regarded civic participation and citizens' involvement in the city administration. Participants asked for the creation of new district-based civic committees, the publication of interim results concerning the new administration's initiatives and the digitalization of the call for tenders.
- Local identity: This area focused on small, local, interventions aimed at reinforcing the connections within and among neighbourhoods. Participants asked for the institution of *walking school buses*, for the development of new bus routes connecting the peripheries, and for the preservation of the rural areas surrounding the city.
- Labor and employment: This discussion was aimed at collecting proposals on how to reinforce the local economy. Participants asked for easier access to credit, for the development of new initiatives connecting the local university with industry, and the relaunch of agriculture through the reorganization and modernization of farming practices.
- Regional identity: In this discussion, citizens were invited to suggest how to improve or rethink the connections between the city and the larger region of Emilia Romagna. People asked for improved integration between the region's public health service providers and the development of new, conjoint, cultural activities (e.g. synergies between museums).

The whole initiative encompassed a series of events held across the city and the installation of a web-based platform designed to collect citizens' ideas and to stimulate public dialogue. Specifically, the Mayor's communication committee relied on Deebase, an already existing Content Management System (CMS) aimed at supporting online communities with enhanced forum functionalities. However, the original CMS was not used as it was, but it was adapted to the necessities of the committee. Even if their purpose was to construct a deliberative online space, at the same time they wanted to prevent the initiative turning into a political backlash in the hands of the opposition. Therefore, the platform's functionalities were negotiated between the committee and the Deebase IT team: for instance, the former asked to maintain control over the seven areas of debate, thus inhibiting users from creating new discussions autonomously.

Once the platform was ready to be launched, a public meeting was organized by the communication committee to explain the citizens (mainly those belonging to the candidate's political party) the initiative's aim and the platform's functionalities. Throughout the one-month experiment, participants were invited to substantiate the topics with their ideas, to extend and discuss those of their fellow citizens, or to simply cast their votes for their favorite ones. Each debate was substantiated by *opinions*, which in turn were developed into *motivations*. Users had the option to add and rank both *opinions* and *motivations*, allowing each debated issue to be separated into many facets, and then to rank them for relevance. Despite the emphasis posed by the organizers on the platform's deliberative aspect, citizens limited their actions to the submission of their personal views, or to the support of those

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submitted by someone else. Very little or no interest was shown in debating others' ideas. However, at the end of the initiative, most of the content emerged from the platform was translated into goals in the mayor's electoral programme.

Methodology

The evaluation of whether this tool was able to provide a deliberative space requires two parallel analyses. On one side, an investigation on the different understandings of *deliberation*, as negotiated between the initiative's *developers* and *organizers*. This analysis should reveal how these different interpretations were inscribed into the digital artefact throughout its design and implementation. On the other side, the information generated by the CMS helps to understand how the platform's inscribed functionalities were further negotiated by *participants* through its use, and which consequences this negotiation had on the deliberative experiment.

The platform design process had been closely monitored through weekly meetings with one of the three platform *developers*. This respondent was chosen because of his role in the project, as he was the main interface between the *developers* and the mayor's communication committee. Additional written material on the design process (email exchanges and meeting notes) was made available by the *developers*' team. Besides these interactions, researchers attended the public event where the platform was publicly presented and formally launched by the mayor and the *developers*. This occasion was informative to understand how the initiative was communicated, especially which importance was given to the online tool and to the whole deliberative experiment. Informal meetings' transcripts, field notes and secondary documents were analyzed using a content analysis software (Nvivo 10), highlighting the attributions of functionality expressed by different agents in time towards the initiative and the platform. The deliberation process was instead analyzed through the public Log File released at the end of the initiative for public use. The Log File recorded all the interactions taking place within the platform, thus allowing a reconstruction of their unfolding over time. In detail, the CMS log file kept track of:

1. Logins and logouts;
2. New opinions submitted;
3. Opinion votes; change of opinions;
4. Submission of a new comment as explanation/motivation for the chosen opinion;
5. Submission of a reaction, i.e. commenting on others' comments.

This information was mapped using a Social Network Analysis (SNA) software (Pajek). While SNA alone cannot prove the degree of deliberativeness of the initiative, it nevertheless provides a good qualitative representation of actions and reactions chains that took place within the platform. It shows how the different discussions branched out and which functions of the platform where mostly used. Combining these data with the content produced by *participants* within the platform and with the feedback information collected by *developers* at the end of the initiative (who independently conducted a simple users' survey on the experience), was crucial to reconstruct participants' attributions of functionality, despite the lack of unrestricted access to the users' base. All data were anonymized by removing usernames, which were replaced with a unique identifier, thereby preserving the confidentiality, but not the full anonymity, of the research.

The *case study* method has been employed because it is one of the most appropriate research designs for conducting idiographic studies (Babbie & Benaquisto, 2014; Eisenhardt, 1989). This methodology is recognized as having several advantages, for example that of

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providing opportunities for identifying complex interaction effects, and of being useful both for testing hypotheses, conceptual refining, and thus for theory development (George & Bennett, 2005; Yin, 2009). A clear limitation of the analysis relates to the clustering of participants in three groups. Indeed, the inherent danger in the use of such broad categorizations is social groups reification, which might neglect to account for all the ways different people interpreted the initiative, the platform, and others participants' moves.

Analysis and discussion

Rooted on the aforementioned theoretical frame, the analysis assesses whether the digital platform employed by the municipality functioned as a deliberative space where citizens could actively discuss and deliberate on city-related issues. Moreover, it tracks the negotiation processes occurring among the three major actors' groups (initiative's *organizers*, platform *developers*, *participants*) around the digital artefacts' functionalities.

Assessing the deliberation process

According to Gastil (2008), a deliberation process is composed of two phases. At the beginning, participants are invited to express their opinions on the topics, and to compare their own values and solutions with those of others. This comparison may lead to a change of values and opinions, and to the emergence of new ones. If a negotiation is possible, in the subsequent phase opinions are aggregated and included in an agreed-upon statement. By applying these concepts to the case study, an online debate can be considered as *deliberative* if participants, in a discussion topic:

a) Insert a new *opinion* or vote on an already submitted opinion;

Figure 1. Adding new opinions to the debate

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b) Add a *comment* for the chosen opinion or vote for an already submitted comment;

Figure 2. Adding a new comment

c) Add a *reaction* to someone else's comment.

Figure 3. Adding a reaction

In conjunction, actions a, b and c represent both the *opinion formation* and the *opinion aggregation stages*. Their co-occurrence at the level of a single participant can be considered as the minimum acceptable level for assuming a glimmer of deliberation, as they presuppose both the evaluation of different opinions available (*opinion creation stage*) and their selection (*opinion aggregation stage*). In our case, since the unit of observation is the single discussion, this co-occurrence should be checked for each of the seven topics presented in the platform, as independent from each other. Below are the results of this first analysis.

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Table 1. Overall data collected on the platform

Action type	Public services	Labor and employment	Technology and innovation	Regional Identity	Security	Participation	Local Identity	Total
Opinions	5	4	8	5	3	5	8	38
Comments	5	13	18	11	13	12	23	95
Vote to opinions	4	5	7	9	8	9	8	50
Vote to comments	4	6	7	4	8	5	9	43
Reactions	0	0	0	0	1	0	0	1
	18	28	40	29	33	31	39	218

As can be seen in Table 1, the average number of new *opinions* per topic is around five, while the average number of *comments* is fourteen. The topics "*Local Identity*" and "*Technology and innovation*" greatly outperformed other topics in catalyzing participants' attention. The least participated topic was "*Labour and employment*".

Table 2. Number of participated topics by single participant

# topics	# partecipted topics x participant
7	0
6	2
5	5
4	1
3	7
2	2
1	22

Table 2 shows how many participants had been contributing in one or more topics (the total number of participants was 139). None had been following all of them, and the majority of participants followed just one topic. Moreover, it should be noted here that 18% of participants just logged onto the platform, but never performed any actions at all.

Table 3. Number of actions types performed by users

# actions types performed	3	2	1
Public services	0	9	0
Labor and employment	0	9	0
Technology and innovation	0	12	3
Regional Identity	0	8	6
Security	0	7	4
Participation	0	12	2
Local Identity	0	14	2

Table 3 clearly indicates that none of the participants performed all the possible actions available within a single topic. The vast majority of participants performed only two actions, despite all the possible permutations available; these were:

- a+b: Voted or submitted a new *opinion* and voted or submitted one or more *comments*
- a+c: Voted or submitted a new *opinion* and added one or more *reaction* to other's *comments*

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The b+c combination was not possible in accordance with the platform's rules, since the b action requires a. In fact, in order to submit a new *comment*, a user had to first support or add a new *opinion* to the debate.

These descriptive statistics already provide a clear indication of the *non-deliberativeness* of the debate, as they show how participants did not engage with the ideas submitted by their fellow-citizen, e.g. using *reactions*. However, to gain a more comprehensive understanding of what happened within the digital space, it is necessary to explore the interactions structure.
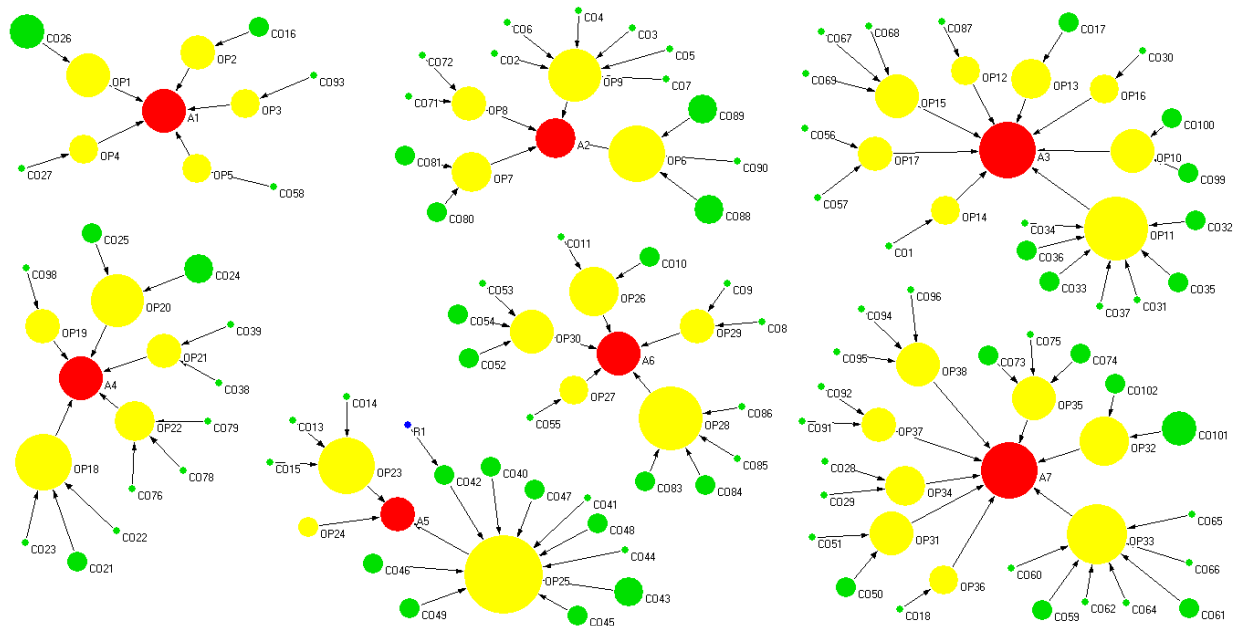

Figure 4. SNA of the overall topics discussions

Figure. 4 represents the deliberation activity for each topic. Red nodes represent the *topics*, yellow the *opinions*, green the *comments,* while *reactions* are blue. The size of each node reflects: for *topics*, the number of opinions inserted; for *opinions*, the number of votes received and the number of comments inserted; for *comments*, the number of votes received. The graph shows to what extent some *topics* stimulated the submission of several *opinions*, which in turn branched-out into multiple *motivations* (e.g. A7 and A3), while some others triggered polarized responses with relatively few *opinions* and various *comments* (e.g. A1 and A5). What is striking is the near absence of *reactions* (action c, performed only once, in Topic A5), i.e. replies to others' *comments*, which proves the lack of interactions among users supporting different *opinions*.

Following the operationalized definition provided above, it could be largely concluded that the initiative's participants only slightly developed discussions in a deliberative fashion, since supporters of one opinion did not engage with the ideas proposed by others. This lack of the *opinion formation stage* can be measured by the absence of *reactions* (action *c*), i.e. users' reactions to other comments. This absence stands for the inability of the initiative to foster discussions between citizens with diverging ideas on the issue being debated.

Negotiation process of the online platform's functionalities

Notwithstanding the fact that the initiative did not produce a sufficient level of discussion among participants to be considered a deliberation process, it is important to critically reflect

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on what might have been the possible causes. One way of understanding it is by reconstructing the platform's negotiation processes occurred among the different groups of agents taking part in the initiative. Specifically, the process of attributions of functionalities formation and enactment in a digital environment, and the frictions arising among different attributions towards the platform. What emerges from the collected empirical data is a substantial discrepancy between the functionalities the platform was designed to fulfil according to the *organizers*, and those enacted by *participants*.

The *developers'* goal was to create an instrument capable of supporting structured online discussions. Their expressed aim, as emerged from interviews and through the analysis of the company's promotional material, was to go beyond traditional forum platforms and to develop an online software capable of fostering complex and articulated opinions' exchanges. In this respect, Deebase embodied a conception of deliberation which resembled Gastil's definition: a process though which people interact and collectively discover hidden dimensions of the issues at stake. Accordingly, the platform allowed users to explore new ideas, submit their own proposals and extend those of others. The process culminated with a democratic vote, which produced an ordered set of ideas, ranked according to their level of acceptance. This process, as prescribed by the original platform, entailed both the *opinion formation* and the *opinion selection* stages.

Organizers were interested in the opportunity to include citizens in the writing of the candidate's agenda. However, according to the *developers,* they proved to be not sufficiently willing to face the consequences of such openness. The fear of not being able to adequately and promptly control the interactions that could have emerged from the platform, brought them to negotiate with *developers* the artefact's characteristics: new features were added, others were removed. Basically, the *organizers* limited the allowed interactions to seven pre-defined topics, and asked *developers* for advanced content moderation tools to be implemented. In the *developers'* notes on one of the first meetings with *organizers*, we can read the following requests:

> The admin roles should be expanded. First of all, each new user should be manually activated by the administrator, only after having checked her profile. Moreover, it would be useful to have the possibility to manage each single contribution, in order to remove offensive contents and, in case, to ban those who do not behave according to the rules (cit. *organizers'* spokesperson).

The *developers*' spokesperson revealed the frustration that they were experiencing while adapting the technology to the *organizers*' attribution of functionality. In fact, the latter conceived the platform not just as a deliberative space, but also as a propaganda instrument for the candidate. A specific episode reveals the misalignment between the two groups. 17 days into the experiment, a user posted an inflammatory comment, unrelated to the discussion and in open contrast with the candidate's program. The *developers*' spokesperson informed the *organizers* about the event:

> Today we have noticed some "frictions" within the platform. I noticed that the content was removed almost immediately. I don't know if you had the chance to contact this user, but I was wondering if it was more appropriate to publicly post a "reaction", explaining why this kind of contributions are not productive for the discussion, and also advising the user to better articulate his oppositional stance (cit. *developers*' spokesperson).

The *organizers* replied confirming the user's ban from the platform:

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> Before removing the contents, we sent an email to the user, explaining why his comments were removed. We have invited him to participate only in case he is willing to submit proposals that truly reflect his perspectives (cit. *organizers*' spokesperson).

This passage is evocative of the different attributions carried by *developers* and *organizers* toward the platform: the former privileged content production over control (which was instrumental to demonstrate that the platform 'was working' as a deliberation tool, i.e. that it was collecting contributions from the citizens, even polemical ones), while the latter favored control over deliberation (as a way to preserve the candidate's image and program coherence). Therefore, it can be argued that the *organizers*' attributions towards what does it mean to provide a context for public online deliberation configured the degree of freedom they ended up granting to the platform's future *participants* (Woolgar, 1990). In envisaging the *participants'* roles, *organizers* projected their own identity (i.e. supporters of the candidate) into the design of the platform's functionality (Bardini & Horvath, 1995).

Finally, *participants*, when accessing the platform, were carriers of their own personal attributions towards the initiative, the platform functionality, and what their role was supposed to be within it. These attributions were mediated by the information received from the *organizers* during the live event, through the initiative website's content, and the *Graphic User Interface*. Moreover, since in a digital space *participants*' attributions of functionality are *visible* to others - as they become *self-evident* in the same moment their actions take place - when accessing the platform, they also found the traces left by the actions of those who preceded them, and that had inscribed their attributions in the form of contents.

The almost exclusive reliance on *opinions* and *comments* downplayed the relevance that *reactions* had within the platform. However, these were also the only means available to participants for comparing their ideas with those of others and, hopefully, to discover new ones. In Gastil's conception of deliberation, *reactions* were an essential component of the *opinion formation stage*. The visible attributions towards the platform made by former participants and the absence of confrontations among participants with different ideas might have reduced what Lane and Maxfield (1997) describe as the *permissions to act,* i.e. the degree of freedom that agents arrogate themselves to create their own attributions of functionality and to enact them in practice. In the case analysed here, some of these *permissions* were formally established by *developers* and *organizers*, at the beginning of the initiative. However, throughout the progressive inscription of attributions made by other *participants*, with their actions in the platform, they were informally redefined, thus narrowing the permissions of subsequent newcomers. In a way, the community itself restricted over time the range of *allowable* actions in the platform. This reduction does not necessarily coincide with a convergence of possibilities: at any point in time, the attributions inscribed in the platform could have been reinterpreted by *participants*, thus fostering the exploration of new functionalities (even those previously discarded). The result is not an inexorable process of closure (Bijker et al., 2012, p. 39), but rather a complex interplay of attributions, which may sometimes push towards a common understanding of the technology, and other times towards a clash of different attributions, unable to generate new meaningful and shared interpretations of available technologies.

In the analysed cases study, this dynamic converged towards a functionality different from those envisaged by *developers* and *organizers*. Despite the information provided by the *organizers,* and the values inscribed within the artefact through the *Graphic Users Interface* and the interaction rules, *participants* adopted a rather passive role. This behavior, observable since the very beginning, was reinforced by new users when, joining the platform, they conformed to the behaviors of those preceding them, i.e. they limited their contributions

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within the boundaries of their own opinions, without exploring and contributing to *competing* ideas. This led to a self-reinforcing dynamic that determined the failure of the deliberative initiative, as envisaged by *developers* and *organizers*.

Conclusions

Collective awareness has been gaining momentum over the past years. The pervasiveness of Internet connections and the accessibility of digital devices in the *Global North* have created the opportunity for experimenting with civic engagement on a large scale. This unprecedented opening in some cases revives a rather instrumental approach to technology, combined with utopian (or dystopian) dreams of hyper connected and smart communities. This research provides two theoretical insights, helpful to evaluate these kinds of initiatives. The first is rooted in the critical conception of deliberation provided by Fishkin and Gastil (Fishkin, 2009; Gastil, 2008), and it can be used to assess the deliberativeness of computer mediated communications. The second is Lane and Maxfield's approach to innovation (D. A. Lane, 2016; D. A. Lane & Maxfield, 2009, 2005), which provides a grammar to detect the emergence of unforeseen attributions of functionalities towards deliberations tools and these initiatives.

In this regard, this study is about a process of construction of an online deliberation space, and about how its functionalities changed as a consequence of the interactions among the involved groups of agents. While software *developers* designed the platform to be a digital collective deliberative space, it turned out to be a means of political propaganda and a digital suggestions box. For the initiative's *organizers*, it was the opportunity to promote their candidate and engage new segments of voters. For *users*, it was a place where to post their ideas, and not where to talk and discuss them with their fellow citizens. The interactions among the three groups brought to a clash of attributions, which did not generate the outcomes envisaged by *developers* and *organizers*. E*x-post*, it is possible to reflect on what could have been done to align *participants, developers* and *organizers'* perspectives. A possible option could have been the introduction of mediators along with the deliberation process. Their role should not be that of driving *participants* in the direction envisaged by *organizers* and *developers* - as this would privilege one attribution of functionality over others. Instead, it should be to detect novel usages of the technology over time, and to inform *organizers* and *developers* of new emerging needs, which may lead to modifications in the online deliberation space and in the whole initiative (Anzoise & Sardo, 2016).

Indeed, the complexity and uncertainty stemming from the introduction of technologies even in controlled environments, should remind us of the impossibility to predict every possible attribution, and therefore any potential functionality, which an artefact can acquire once in use. In fact, the attributions development and the interactions among agents is also influenced by cultural and *localized* aspects, which take the form of existing practices and networks of users and devices. These uncertainties constitute a threat to one of the pillars of digital civic engagement initiatives - and of Collective Awareness Platforms more generally - namely the possibility to leverage on the network effects, and on the *collective intelligence* stemming from it, for tackling social issues (Sestini, 2012). The concern here is not to identify and reduce the sources of uncertainty, but instead to deal with their existence and to learn how to include them in a continuous process of technological design. This can start, for example, by recognizing participants not just as mere users, but as agents capable of changing the rules inscribed in the technological artefacts.

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