Civic Social Network: A Challenge for Co-production of Contents About Common Urban Entities

Alessio Antonini(✉), Guido Boella, Lucia Lupi, and Claudio Schifanella

Department of Computer Science, University of Turin, Turin, Italy
{antonini,boella,lupi,schifanella}@di.unito.it

Abstract. Developing a civic social network requires to consider users meeting in real life, collaborating on digital entries related to real urban entities. This makes necessary to think about collaboration tools in a new perspective: ensuring the participation of users with different levels and forms of legitimacy to represent complex relations among entities, and ensuring the accountability of each contributor. We present a set of technical solutions allowing the collaboration on complex entities, keeping interactions simple, and representing multiple perspectives about shared entities.

1 Introduction

The fragmentation of information is one of the outcomes of the multiplication of web sources. A new type of social media is starting to address this issue by establishing a framework to gather multiple levels of contributors and to evaluate the relevance of information in relation to their sources. Civic social networks (CSN) [2, 4, 10] or rather social networks based on citizenship and public engagement at local and urban level, belong to this new model of social media.

Design and developing a CSN is not an easy task, because user legitimacy and responsibility over contents are already complex problems to address, but they becomes blocking in a digital environment where users and entities are referred to a confined physical space and digital conflicts can break through real life and vice versa. The main approaches about collaboration on digital platforms do not deal with the chance of users interacting in real life and with concurrent perspectives and goals.

In particular, we focus our attention on users with different and maybe irreconcilable positions interacting on the same digital entities corresponding to real places, events, and so on such as a square or monument description. Indeed, at urban and neighborhood level, real life entities are involved in very complex dynamics generating many different perspectives on the same entity that potentially can be expressed in a digital space.

In our opinion, a CSN cannot force a simplification of such entities without embracing very strong positions in favor of one of many parties. Moreover, a CSN aimed to represent urban and local reality avoiding the fragmentation of information should

A part of the research leading to these results has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n° 693514.

T. Yoshino et al. (Eds.): CollabTech 2016, CCIS 647, pp. 65–73, 2016.
DOI: 10.1007/978-981-10-2618-8_6

not host multiple parallel unconnected definitions of entities, but rebuilding the context integrating different contributions. Allowing the mere multiplication of viewpoints will engage users in a battle of popularity for the right above entities representing the reality as how users may want it to be (simple), instead of representing the reality as it is with its facets and issues.

Since there is not one legitimate position and there is not a single local actor having the right about what is common, a CSN has to provide the means to build a common platform for concurrent positions without exacerbate conflicts but promoting collaboration in real life. About the cooperation on common entities on a digital platform, we see three main issues:

1. Given different forms and levels of legitimacy of local players, how to let various sources coexist without forcing a common position or an unilateral perspectives?
2. How to share the responsibility among proactive contributors on the platform preserving the different perspectives and goals of real life involving a close relationship with urban entities?
3. How to build the complex identity of shared urban entities?

During a participatory design process involving 600 people in 50 meetings and workshops, we engaged potential users in evaluating the main approaches about collaboration on digital platforms in their context. Considering their inputs, we designed and developed a set of solutions oriented to the following goals:

1. Providing a mechanism to contribute to contents regardless their initiators,
2. Providing a mechanism to share the responsibility of moderation,
3. Ensuring a clear accountability of users even in case of multiple contributors.

We wish to avoid taking a side, preserving the richness of the context and letting users make their own interpretation and choices according to their own goals. The result is a system capable of representing a network of digital entities corresponding to real urban and local things, each one of them enriched with second order entities decoupled from the entity authorship. Moreover, we defined a mechanism to share the responsibility about contents related to each entity among the contributors, releasing the first author (initiator) from the burden of moderating a growing entity.

In this paper, we are going to present a brief analysis about the main approaches used by the most successful digital platforms based on users' collaboration for the content production. In Sect. 3, we describe the main issues behind the technical solutions we implemented, which are illustrated in Sect. 4. Lastly, we synthesize our conclusions and the future developments of our CSN.

2 State of the Art

Nowadays, social networks are the most commonplace where to find different perspectives about almost anything. Pages and groups about real entities are widespread, but even in a virtual spaces conflicts rise about how an entity should be described, who holds the right to say something about it, etc. When this happens about common urban entities,

or in other words about places lived by multiple actors and actions made by more than one of them in the same shared space, many players may hold a vital piece of information, a perspective that can help others in their tasks, and consequently a point of view that need to be represented and integrated with others preventing or solving virtual conflicts. Existing digital platforms implement different strategies to mediate among users according to the platform goal and the type of information they handle.

We are focused on finding a solution that may work with real users in a real application. For this reason, we focused our attention on the standard approaches from major web players rather than searching among theoretical analysis of the problems mentioned above.

In order to make a comparison, we introduce an emblematic example we found during our workshops with potential users.

We need to map a school in the neighborhood. Who is legitimate to describe the school? The dean, the school board, school employees, teachers, students' parents, former or current students? The school board and the dean can describe the school in term of educational vision and methods, or syllabus and training paths; employees are qualified to write about the public services offered by the school; students and parents can share their experience lived in the school environment.

What if the school is hosted in an historical building? What is more prominent? The historical or the educational aspects? Therefore, who is legitimate to describe the historical aspects? Historians, architects, local experts, students, neighborhood inhabitants, cultural heritage authorities, or local administrations? The local administration can motivate the change of destination of a monumental place to a public facility in order to revitalize the local area. Historians can describe the significance of that building in the city history. Architects and local experts can describe stylistic and technical characteristics and why the building is worth to be preserved. The cultural heritage authority can place the building into the local cultural assets. For the inhabitants is a focal point in the neighborhood over the time.

The example can become even more complex. What if the school gym is used by sport organizations for their activities? What if the school is managed by a religious organization?

The school is a complex urban entity that lends itself to be represented by a multiplicity of descriptions, all fitting a specific aspect of the reality, with different forms and levels of legitimacy.

In our opinion, there are two main approaches to collaboration in content production on digital platform: *common goal*s and *ownership.* Considering these two approaches, in reference to the example 1, we highlight: the ability to represent the complexity of the example, the quantity and quality of required interactions among users and the social acceptability of the output.

When the platform purposes are clear and self explanatory is it possible to assume the collaboration of users toward a common goal, which may be the definition of an encyclopedia page about the school or a parents group. This first approach moves the problem of plurality to the goal of collaboration: users work to build something specific. Potential conflicts about attribution and legitimacy are solved addressing the compliance

of each contribution to the common goal, done by editors in the case of Wikipedia [1], group owners in Facebook or moderators in forums.

Considering Wikipedia for the example 1, the result will be two interlinked pages addressing the school and the historical building. Homogenous groups of experts, with the supervision on Wikipedia editors [6], will develop each one of them [5]. Personal experience will not be allowed and contingent activities will not be documented.

Considering Facebook groups [9], the result will be a parents group about sharing personal experiences as students' parents or former students. The dean or other authorities will not be included in this kind of group or they may participate as individuals and not as in charge of institutional authority.

The premise of choosing one common goal follows the choosing of one perspective; therefore, this approach fails to represent the complexity of reality we intend to reach. This methodology requires strong and strictly regulated interactions among users and an overall guide to obtain homogenous and sharable results. It is acceptable since it implies collaboration only among willing contributors sharing the common goal.

When expressing the identity is more prominent than other goals, the legitimacy issue is solves in an ownership assessment. In other words, if the goal is to represent an entity in an official way the problem is to identify who has the right on this entity. Collaboration on defining the entity can be done, but under the owner's supervision and permission. In some cases, owners may allows contrasting opinions if the drawback of censuring is bigger than the contrast itself, but contributors have no rights to demand a fair acknowledgement of their positions. This is the approach of Facebook and Google + pages, of Google maps about places and of websites integrating social media features. The collaboration mechanisms are meant to mediate the asymmetric relation between one owner and many contributors with no rights.

Considering Facebook applied to the example 1, the dean will open an official Facebook page [8] of the school giving the responsibility of managing contents to an employee that will publish only general information and official announcements. If the dean wants, the page can collect comments, which will be moderated by the same employee, or simply ignored. It will result in parents and students opening their own groups about specific topics or even fake or unofficial pages about the school in order to express other positions than the official one.

Considering Wikipedia, a contrast of opinions will be resolved asking for sources such as the official school website or the school board documents. The hierarchy of sources leads to the users' hierarchy.

Anyone can add information on Google maps, but in order to claim the ownership of a place [7], a postal card is sent to the declared address in order to verify the owner identity. But then, once a place is mapped, also anonymous users can indiscriminately post comments, ratings and pictures which the owner has to keep in check in order to avoid attacks from rivals.

In each case, the perspective is one and limited by the tool. The result is the multiplication of entry points, which is not a problem for Google and Facebook but it is for users that must know where to search information. In these systems, interactions among users are simple and clear but mostly left to the good will of the owner, which has actually

no obligations toward others. The acceptability is very low for the excluded users that are the large majority.

Can a virtual space host multiple representations of reality avoiding forced interactions and difficult collaborations? In our opinion, this issue is specifically tied to the CSN context, rather than to other platforms managed by the major web players considered before even if they are collaborative platform. Indeed, a CSN is aimed to support real interactions of users and their actions in a physical world, and therefore it is mandatory to provide ways of coexistence helping users to negotiate in mutual respect of their roles and to integrate their perspective because in reality it is not possible to avoid who is physically close to you.

Summarizing, we need a way to manage the complexity of example 1 keeping interactions simple and avoiding uproars in the neighborhood.

3 Open Issues

There are different forms and levels of legitimacy, but is it something a CSN should mettle on? In our opinion, users should make their own evaluation about the relevance of each contribution considering their context and contents of interest. About sources, we consider only real users: single citizens or collective bodies if regularly registered at local level. The evaluation of the different level of legitimacy among single citizens, institutions or local organizations is left to users case by case. Moreover, users may have different legitimacy according to the type of content they are providing: a citizen may not be entitled to provide an official representation of an urban entity, but a personal experience can be more valuable coming from a single citizen than from a public office for other users. Following the example 1, the experience expressed by former students may be much more relevant than a dean statement about how the school experience will be for your children.

In order to ensure plurality and cooperation, the responsibility should be shared among the interested parties. Who are the interested parties? We cannot enter in each dynamic, but what we can do is to identify the proactive contributors investing enough energy to be recognized worth of responsibility. Being proactive is not related to the production of digital contents in general, but to documenting real actions having an effect at local level using the platform functionalities to enhance processes and outcomes. On the contrary, sharing opinions does not mean be proactive, because not necessarily an opinion is related to what is happening in real life.

How to share the responsibility among contributors preserving their different perspectives? Private goals are legitimate in real life, but in digital platforms are not so evident and this is one of the reasons leading conflicts in entity representation and experience sharing. On the other hand, providing means to express explicitly a perspective can help solving and avoiding misunderstanding making the contents much more "semantically accessible" to users.

How to build complex entities preserving their identities? In our opinion, the identity is preserved only if an entity has a single evident entry point. The multiple facets of an entity should be solved with an internal and external structure rather then multiplying

the entity. Structuring entities can still grant the chance of having different responsible groups for different purposes.

Summarizing, the desiderata are: structured single entry point for entities, shared responsibility instead than ownership, public visibility of all point of views and user accountability, and content driven solutions.

4 Technical Solutions

In order to build a common ground for many points of views, we separate the creation of a new entity on the platform from its descriptions, or in other words, we make a distinction between entity properties and description properties.

Technically speaking, we have first order entities working as shared entry points and second order entities. We defined a shared set of primary properties belonging to the entity and defined in the creation process[1]: title, valid time interval, categories, tags, external URL, coordinates (latitude and longitude). Each primary entity may have specific primary properties, for instance: events have door time, duration, organizer, attendees and performer[2]. Primary properties should be more or less objective in order to avoid the proliferation of proliferation of homonymous entities. Following the example 1, we want to avoid many parallel entries about the same school letting the first one defining a "place" school without having the concern of making a general or official description.

Then we defined a set of second order entities to describe a primary entity. The second order entities are available for any primary order entity as its complement and to any user, except into groups where the content creation is reserved only to the group members. The second order entities are meant to be fast to create. As today, we implemented: descriptions requiring a title and a text, comments requiring just text and images (Fig. 1).

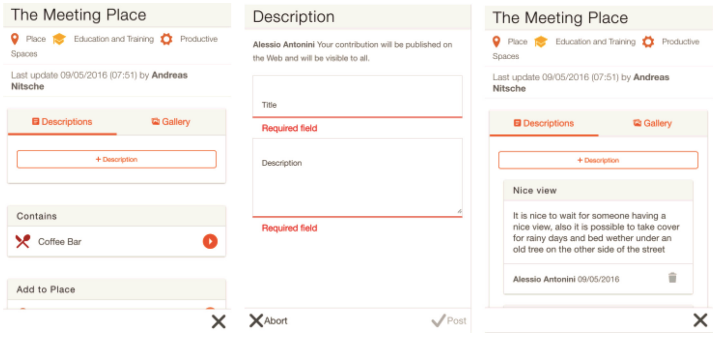

Fig. 1. On the left a place containing an event, on the center the editor for descriptions, on the right the first place with a description made by a different user.

[1] A sandbox can be found at http://test.firstlife.di.unito.it.

[2] The entity properties are mostly implementation of http://schema.org specifications.

The result of combining light weighted primary entities with structured fields made of secondary order properties is having a sharable entry point collecting different perspective with a clear attributions related to each second order entity.

Managing typed single entry points is not enough to catch the complexity of real life entities. In general, we consider part of relations among entities of the same type:

1. A place can contain sub-places, such as office rooms
2. An event can be composed by several sub events
3. Articles can have sub-topics
4. Groups can be spliced in operative or thematic sub-groups.

There are other relations cross type we introduced:

1. "location", from an event to a place
2. "news of" from news to an entity that is not a news
3. "group of" from a group toward an entity
4. "group from" an entity to a group

Adding relations among entities results in giving the possibility to build complex structures from a single entry point from different users' contributions (Fig. 2).

For instance, following example 1, the "place" school can hosts events, organized in many sub-events, and groups, structured around a class or a type of activity. An events organized by a sport organization can be independent from the school context, but it can be hosted in the school and the same for the news related to this event (registration, updates, etc.).

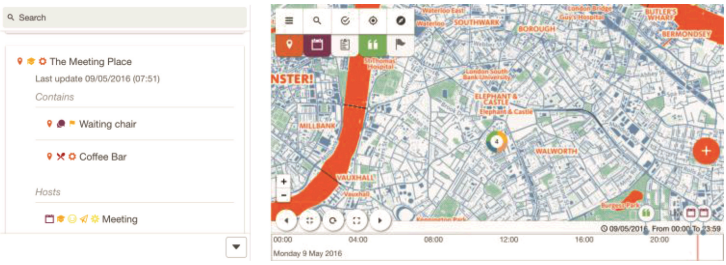

Fig. 2. Left, a place containing two other places and an event. On the right, a map view.

An entry point is the result of one user initiative but one user, even if legitimate, cannot cover all the point of views about an urban entity. Moreover, one user should not have the monopoly of an entity for many reasons.

1. Lack of perspective, as we just stated he/she cannot pretend to express everything can be said about an entity;
2. Dynamic reality, things change and so users commitment toward taking care of a piece of information;
3. Excess of responsibility: the burden is too heavy from the user perspective and the risk of missing an important and vital piece of the puzzle is too high from the community perspective.

4. Coproduction of social reality, nothing social is made by one person but everything requires others and so their representation.

We do not recognize the role of owner, but the greatest importance is referred to contributors. Each primary level entity has one initiator (the first contributor) and contributors. From an entry point, in parallel with the graph of entities, we defined a network of collaborations replacing the standard friendship/following-relations of social networks. Users are connected through contents and so they share the responsibility of taking care of contents acting at content level.

The initiators still play an important role in the beginning, but on the contrary of other web 2.0 and social network mechanisms, the burden is released as the entities becomes more complex relying on collective moderation. Contributors are engaged in self moderating themself, being notified about activities and comments added to the entity they contribute to create, and they can comment, report abuses or eventually delete a contribution.

A user can always be identified playing the contributor or the moderator role resulting in exposing yourself and your own reputation. Contributor and moderators conduct must be compliant with the guidelines included in the ethical code of the platform. Moreover, they can always report abuses to the platform administrators.

5 Conclusions

This contribution addressed the concept of civic social network as collector of urban information and cooperation environment for public actors and citizens. The design process of 50 workshops and meetings involving local actors highlighted three main issues related to collaboration in representing real entities:

1. The coexistence of contributions from different perspective;
2. The distribution of responsibility among users;
3. The complexity of the identity of real life entities.

Following, we developed an alternative approach to the mainstream in order to tackle the users' demands enabling multiple perspectives and contributions, shared moderation, content-based networks.

Currently, we are in an advanced testing phase engaging users in representing real scenarios. An English version is available for the project WeGovNow![3].

References

1. Ray, A.: Reviewing the author-function in the age of Wikipedia. In: Ray, A., Graeff, E., (eds.) Originality, Imitation, and Plagiarism: Teaching Writing in the Digital Age, p. 39 (2008)
2. Kaplan, A.M., Haenlein, M.: Users of the world, unite! the challenges and opportunities of social media. Bus. Horiz. **53**(1), 59–68 (2010)

[3] WeGovNow! is H2020 project about developing a we-government platform at European level. The demo is available at http://wegovnow.firstlife.di.unito.it.

3. Kietzmann, J.H., et al.: Social media? Get serious! understanding the functional building blocks of social media. Bus. Horiz. **54**(3), 241–251 (2011)
4. Gordon, E., Mihailidis, P.: Civic Media: Technology, Design, Practice. MIT Press, Cambridge (2016)
5. https://en.wikipedia.org/wiki/Wikipedia:Reviewing
6. https://en.wikipedia.org/wiki/Wikipedia:Editorial_oversight_and_control
7. https://support.google.com/business/#topic=4539639
8. https://www.facebook.com/page_guidelines.php
9. https://www.facebook.com/help/162866443847527/
10. Pasek, J., More, E., Romer, D.: Realizing the social internet? Online social networking meets offline civic engagement. J. Inf. Technol. Politics **6**(3-4), 197–215 (2009)