Get Together: A digital platform for urban social participation

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Abstract. Citizens are the daily users of urban spaces and their facilities. It is important that they collaborate with local authorities for effective management, development, and maintenance of the cities they live in. Public participation although important is still developing in several European cities because its implementation poses difficulties. In this paper we argue that using digital technologies via a participatory digital tool, can empower citizens towards more engagement and collaboration on the city development. Despite the existence of several participation tools, we identified the lack of a tool that allows citizens to collaborate more actively in local development in a simple way. In this paper we introduce Get Together, a tool designed to improve collaboration between citizens and local authorities, that proposes a user experience that enables citizens to create design solutions, promote debate and perform a vote on the preferred solution, while having technical advice from municipal officials' specialists.

Keywords: Codesign, Digital technologies, User experience, Participation, Local development.

1 Introduction

Cities, more than a set of buildings and public spaces, are the result of social dynamics created by the lives of citizens that inhabit them. By having an active and participative role in the development of the spaces they inhabit, literature shows that citizens acquire a higher feeling of identity, ownership, and pride towards their living surroundings (Marschall, 1998; Sanoff, 2000, 2008).

There are several citizen participation initiatives and open urban data platforms that citizens can access, contribute with information, and discuss about their city, or even propose their own ideas for city development. Despite the existence of these participatory initiatives and platforms for web-based

data collection, the outcomes are not translated into architectural and urban planning design proposals (Nuojua et al., 2008).The problem identified is the lack of active collaboration of citizens on the design of the city in a simple and easy to use way. One way of acting on this problem is to develop a user-friendly and interactive digital platform to support co-design of local development projects that goes beyond the discussion and takes role in practice.

In this paper we introduce Get Together, a web tool intended to be a digital space in which citizens actively contribute by creating project proposals that reflect local requirements and are the basis for discussion among all stakeholders, to design a solution together. With Get Together, citizens participate in a transparent and collaborative way, in the creation, debate and voting of projects, while obtaining advice and feedback from experts in municipal authorities.

2 Participation and digital collaboration

2.1 Participatory and collaborative processes

Social participation in architectural design is a research topic that has been discussed since the 1960s by several authors such as Yona Friedman (1958), Sherry Arnstein (1969), John Carp (1986) and Fredrik Wulz (1986), and practiced in some project typologies and scales.

Relevant to the discussion is the distinction between what it means to participate and to collaborate, which gives rise to the distinction between participatory processes and co-design processes. Participatory processes are usually carried out with the participation of potential end users, who are invited to express their opinions and demands to be considered when the designers define the project proposals (Fröst & Warren, 2000). The inherent collaboration of co-design processes, implies more active involvement than the one observed within a participatory process, meaning that, in co-design, all participants contribute actively and in a balanced way to the proposal and presupposes that they contribute to the design definition (Stelzle & Noennig, 2019). In short, participation is related to approval of the designers' solutions and co-design is related to an active collaboration during the design phases.

Regarding the design process, participatory design encompasses tools and techniques that involve designers and non-designers in creating new future scenarios. Sanders and Stappers (2014) state that probes (e.g., questionnaires, surveys, and interviews) are used to gather information from users since they are designing for them, while toolkits (e.g., set of physical artefacts) are used to design with them, thus providing non-designers with means to generate the solutions themselves. Faliu et al. (2018) believe that these tools should help non-professionals to express their ideas through the

creation of proposals, otherwise their participation will be limited to the visualization of proposals made by the designers and final feedback. Accordingly, Brandt et al. (2012) refer that “making” activities allow externalizing thoughts and develop tactic knowledge, and toolkits help to create and visualize scenarios. To empower participation different toolkits can be used, like paper mockups, 2D images, stickers, and 3D objects. These authors argue that toolkits are adequate for non-designers since they provide users with graphic components to express their ideas.

However, technicians tend to take control because they are not receptive to proposals production by non-designers (Nuojua et al., 2008). In this line, for a more democratic process, Botero and Saad-Sulonnen (2010) argue that authorities need to reconsider the role of citizens and provide the necessary tools for them to actively contribute to the design process. Huybrechts et al. (2012) introduced Map-it, a toolkit for architectural and urban design, developed to promote discussion and encourage designers to release control over the process. Participants are asked to set up map-based design projects with cards and assign stickers that trigger the confrontation of different opinions

2.2 Digital technologies and collaboration

According to Kwiecinski et al. (2017), there is a lack of effective communication channels between the architect, the design’s final users, and other stakeholders. The authors state that the traditional process of direct discussion is limited by the number of possible participants in the same space, and that there is a need to explore alternative communication channels to reach a wider audience.

Furthermore, the visualization possibilities are critical, since they determine how understandable and clear the design proposal is to the user. Users must be able to understand what is presented, as they lack the skills to interpret technical drawings the same way as professionals. Fröst (2002) argues that a clear and simple visualization assists the understanding of the project by non-designers, avoiding inequalities and providing more information for decision making.

Digital technologies and tools play a crucial role when it comes to supporting collaboration, as they enable new communication channels and simple ways to understand and interact with a design.

Several authors have investigated the requirements for designing computational tools to allow both communication and collaboration during the architectural design process (Achten, 2002; Chiu, 2002), as well as learning through collaborative games (Antle et al., 2011; Collazos et al., 2007; Wendel et al., 2013). These authors highlighted that collaboration is highly dependent on the interaction between participants, and computational tools should include channels of communication and data exchange between them, as well as design-enabling features.

For creating design solutions, not only the visualization possibilities are critical but also the computational tools should provide easy interaction so that users focus their attention on the task, rather than on how to use the tool.

Münster et al. (2017) state that traditional participatory methods can be enhanced with the use of digital technologies. Nuojua et al. (2008) propose map-based participation methods to focus the communication between the citizens and other stakeholders on issues relevant to the planning process. The authors found that web-based mapping solutions support well the traditional methods used in the participatory urban planning process and can reach wider audiences. Draggable digital elements can simulate gestures performed in traditional processes, e.g., when assigning stickers to a printed map. However, besides the use of online maps, we believe that new digital versions of traditional participatory design methods, particularly for the visualization and understanding of the planning sketches, are needed.

2.3 Digital platforms for citizen participation

There are several platforms that accommodate in some extent the issues mentioned regarding participation. In this section, we present some examples of tools for information exchange through open data, citizen information reports and exchange of geolocated data, community discussion, and collaboration in activities.

Exemples of open data platforms are the Lisboa Aberta (Open Lisbon) portal (Câmara Municipal de Lisboa, 2018) and Lisboa Interativa (LXi) (Interactive Lisbon) (Câmara Municipal de Lisboa, 2021a). Lisboa Aberta is an open data platform about the city of Lisbon, constantly updated, with information on different sectors and services such as mobility, energy, and urban planning. The data is produced by the Lisbon City Council (CML) and by partner entities of the Lisboa Aberta program. The Lisboa Interativa (LXi) is a CML's web platform that provides georeferenced information about the city, as location of public services and facilities, urban furniture, bicycle circulation networks, urban management plans, among others. The open data is based in a geographic information system (GIS) and can be reused.

For the bidirectional exchange of information and geolocated data, other map-based platforms include Waze (Waze Mobile, 2021) and Na Minha Rua LX (Câmara Municipal de Lisboa, 2021b). Waze is a web tool and app that allows users to contribute with real-time information about traffic, such as accidents and slow points, while having access to warnings about road works, road traffic jams and lane interdictions. The platform promotes a participatory policy in the management of infrastructure in cities since this data informs authorities of necessary intervention points. Na Minha Rua LX is a platform where citizens can report incidents occurring in the maintenance of public spaces, municipal facilities, municipal housing, and urban hygiene, and are notified when the reported incident is solved.

Regarding the participation of citizens in the city development, manage and maintenance, Urban Mediator (Botero & Saad-Sulonen, 2008, 2010) and Web Map Media (Nuojua et al., 2008) platforms exist to enable discussion among users. Urban Mediator is a software tool that provides for communities the possibility to create, obtain, and share location-based information and engage in discussions. The system is envisioned as a mediator between city official systems and community-driven discussions. Also, Web Map Media was developed to collect local information from citizens for urban planning purposes and opens the resulting plan for public discussion.

Regarding collaboration in activities, the Lisbon City Council promotes a participatory budget (Câmara Municipal de Lisboa, 2021c) through a website that aims to gather ideas from citizens for local development. Proposals from different thematic areas are submitted and, after a voting period, a small number that ranked higher in the vote, are selected to be implemented, under the participatory budget. These proposals are submitted as text descriptions and photographs of the intervention place. Other examples include Futura: The Sustainable Futures Game (Antle et al., 2011). Futura is an educational game that promotes collaboration between players while managing themselves the use of the territory to minimize impacts on the environment. Also, Kwiecinski et al. (2017) conducted a collaborative design workshop to test a platform in which they proposed the use of augmented reality and parametric design as enabling technologies to support collaboration. The given task was for the participants to co-design a public equipment (multifunctional bench) using a tool that allowed them to explore multiple options in an automated way.

The U_CODE project (Stelzle & Noennig, 2019) includes a set of digital tools to help citizens collaborate in large design projects for public spaces and facilities. The goal is to enable citizens to create their own proposals, which are developed and debated by them in face-to-face sessions using advanced technologies, such as virtual reality and multi-touch table.

3 Get Together

As mentioned before, Get Together tool supports co-design by giving users a means to create their own design proposals, with the aim to improve collaboration between citizens and local authorities in local development. For that, the tool is designed to be linked to the city official website since, as Botero and Saad-Sulonen (2008, 2010) state, neither scattered community discussions nor top-down initiatives are fruitful if they do not involve both parties. The target audience are local authorities (as the ones implementing the tool for the city development) and citizens wanting to actively contribute to local development (as the end-users).

In Get together, the process of participation and collaboration, encompasses four phases (Figure 1) creation of proposals; 2) public debate; 3) voting; 4) and project follow-up.

During the first phase of creation of proposals, citizens will be able to participate individually, designing the projects according to what they identify as a need for a particular location. Proposals are georeferenced. Citizens, users of Get Together tool, can access all proposals unless some proposal is created with the aim of involving only the residents of a specific neighborhood.

In the second phase (debate phase), citizens can visualize proposals and debate with other users about them, particularly, on how to improve them according to everyone's opinion. The debates are accompanied by professionals, who act as mediators and provide expert technical advice.

When the deadline for discussion of proposals is reached, there is a voting period, the third phase, to elect the proposal that citizens would like most to see implemented and that will therefore be submitted for municipal approval and further execution.

Lastly in the follow-up phase, the proposals that have been selected by the citizens are announced. The local authorities' technicians work on the chosen proposals and produce the parts still necessary for the project's licensing, in accordance with all regulations and technical requirements. The entire process is therefore transparent and, as such, citizens can follow the progress and understand the different phases and requirements of such public development, including the design, licensing, and construction processes.

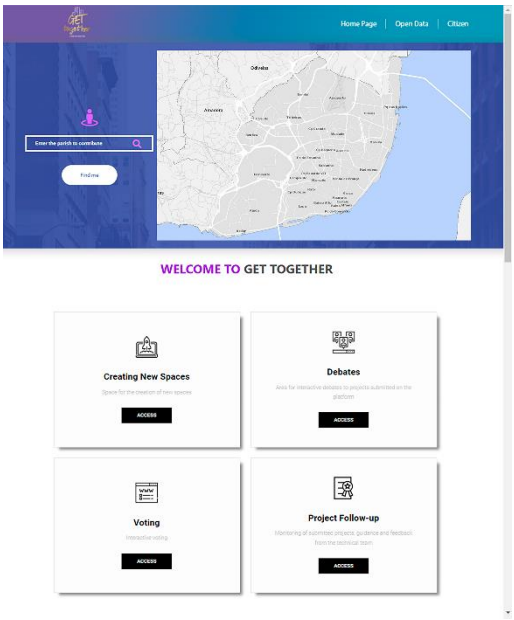

Figure 1: Home page of Get Together, by scrolling down the user can access to the four phases of Get Together process and decide to which phase he/she wants to go.

The tool is based on a map that is shared by all the participants and where they can simultaneously create projects, that are georeferenced and identified with a tag, once they are submitted. In the other phases (debate, vote and project follow-up) projects are accessed through these tags on the map. Get Together uses Lisboa Interativa map (LXi) since the tool was designed for working with Lisbon open data. Thus, the delimitation of the intervention area (Figure 2) is made with the LXi features. Nevertheless, if the tool would be applied to other cities, the map origin would be replaced by Google maps (Google, 2022), Open Street Map (Contributors, 2022) or the GIS map of the specific city.

To create design proposals (Figure 3), the tool includes a library of image icons (side bar), organized into categories (horizontal menu), available for users to drag onto the design (main screen). These icons are adapted to the type of project that is being designed Project categories are: “Mobility”, “Accessibility”, “Health”, “Education and culture”, “Social life”, and “Leisure and sport”. The example of Figure 3 shows the categories (horizontal menu) for a “Leisure and sport” project. These include “Equipment”, “Public furniture”, “Vegetation”, and “Floors”. When dragged from the library (side bar), the image icons automatically adjust to the project’s type of representation (top view) and become georeferenced. This automatic fit allows them to be selected while they are represented in a more identifiable way by using a 3D representation and only when are dragged onto the map, they assume a 2D orthophoto map view form.

When proposals are submitted, they are added to the general map and located by a tag (Figure 4). In the debates, voting and project follow-up areas, access to the projects is done through these tags, identified with a name and the icon according to the category of project that was submitted in that location.

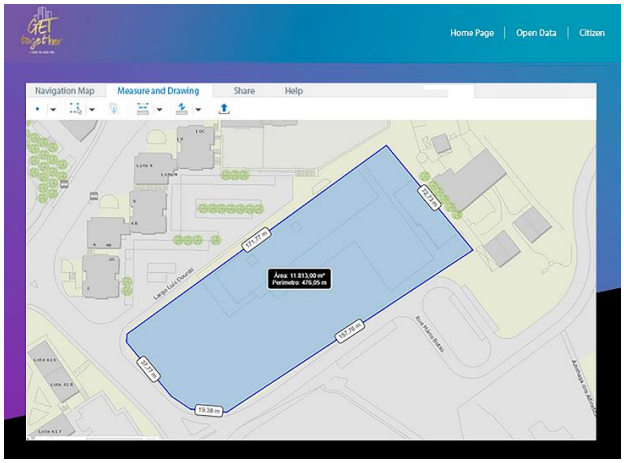

Figure 2: Delimitation of the intervention area on Get Together, using LXi features.

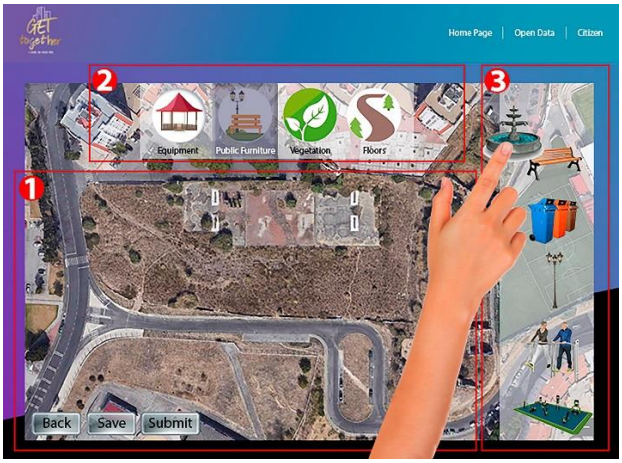

Figure 3: Create proposals interface for Leisure and Sport category. Public furniture is selected, and library items can be dragged. 1 - main screen, 2 – horizontal menu, 3 – sidebar.

To access the project proposals, users click on the respective project's tag and its information appears (Figure 5). This information includes the project's name, area, description, images, 3D models, audiovisual data, etc. The options for debating, voting, or obtaining more information about the project depend on the area in which it was accessed (debate, voting, or project follow-up). In the "Debate" area, participants can choose whether they want to leave a comment or enter a video call to debate with other users while viewing the project on the shared map. In the "Voting" area, participants can visualize the projects and the comments and cast their vote. In the project follow-up area, the user can visualize the information about the project and its status.

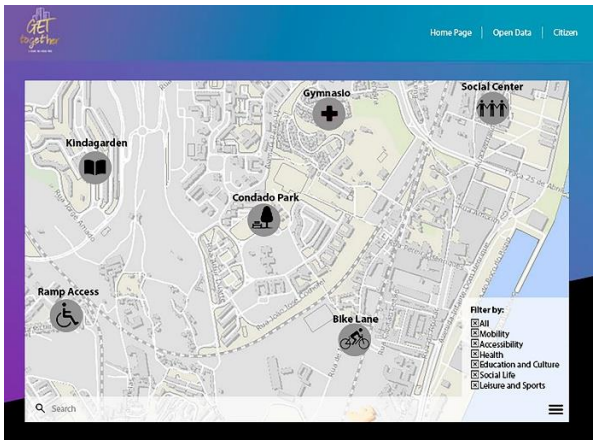

Figure 4: Visualization of a map showing submitted projects tagged with different category icons and filter option below right.

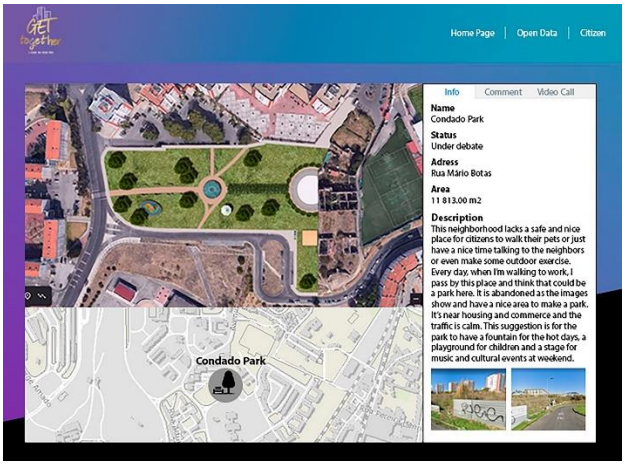

Figure 5: Visualization of a map with a design identified.

4 Discussion

Effective management, development, and maintenance of cities depends on social participation in urban and architectural projects, since citizens (final users) are the ones who have the experience of using spaces. Local authorities need this social knowledge for the solutions implemented to be accepted by citizens, who feel more empathy for the places if they have contributed to its creation (Sanoff, 2008). Despite this, social participation in architectural and urban design still lacks effective communication channels and easy to use design tools.

Some of the platforms mentioned on this paper aim to contribute to cities' management and maintenance as well as to the collaboration of citizens by contributing with their own ideas. However, these tools do not allow the creation of design solutions. City officials are not receptive about letting non-designers to produce design solutions, and the lack of skills to understand technical drawings experienced by most citizens, poses some barriers in the collaboration.

In this paper we argued how digital tools can improve collaboration between citizens and local authorities, by introducing a tool that aims to allow citizens to actively contribute with the creation of their own design proposals. The fact that Get Together provides easy-to-use tools and interactive ways of visualizing allows users to have a deeper understanding of the design solution. This is relevant since users are people without architectural and design skills. Therefore, the tool favors the quality of projects allowing users to combine elements to create solutions in an informed way.

Additionally, our web-based solution allows to broaden the audience, encouraging communication and discussion through debates on the proposals

submitted. Also, the proposals created in Get Together are chosen by citizen voting, instead of being selected by designers, which gives them an opportunity to participate in decision-making. This democratic process empowers citizens and encourage them to further engage with urban development.

Get Together is a tool under development, and future work is needed. Also, testing and evaluation with potential end-users are required and foreseen as future work, to obtain more concrete results. We envision that Get Together can improve collaboration, by providing non-designers with the tools for "making", using draggable library graphical elements that can be combined to create design proposals. Our tool brings traditional techniques to the digital realm, taking advantage of its automation and visualization capabilities, for better understanding and finding common ground between designers and non-designers.

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