

Master Thesis Final Document

**Increasing citizen and association involvement in government decision-making by  
implementing civic engagement platforms: Valencia City case study**

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# Abstract

Civic engagement is believed to be one principle requirement in successful governmental decision making and in turn in realizing deliberation and democracy (Peña-Lopez, 2017; Irvin and Stansbury, 2004). In this study, a state-of-the-art investigation was executed among five civic engagement platforms to decide on the most suitable platform to start building the prototype for the use case of Valencia. The selection was based on the comparison matrix of the specifications elicited from technical project requirements, user suggestions through a survey and a participatory workshop; and adaptability criteria. The selected platform “Communecter” was developed, implemented and deployed on the internet for the validation part for which evaluators from the students of the international master of peace, conflicts and development studies were invited for a validation participatory workshop. Results from the first survey and participatory workshop emphasised the importance of the discussion availability through the platform, possibility of displaying volunteering opportunities and organizing events among a bigger set of functions that are available in the selected platform. The results of the validation show that the current civic engagement platform is a good environment for pursuing civic activities by citizens and associations despite the technical improvements needed and the usability issues. The platform furthermore should be supplemented with other non-technological procedures that will tackle other concerns raised during the study’s participatory workshops including motivation and social & age divide.

## Keywords

Civic Engagement; Community Participation; Citizen Participation;

# Acronyms

API - Application Programming Interface

CMS - Content Management System

CiRM - Citizen Relationship Management

CRM - Customer Relationship Management

HTML - Hypertext Markup Language

HTTP - Hypertext Transfer Protocol

MVC - Model View Controller— *software development design pattern*

NGO - Non-Governmental Organizations

OSM - Open Street Map

REST - Representational State Transfer

UJI - Universitat Jaume I

UI - User Interface

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# 1. Introduction

## 1.1. Motivation

Coming from a country in development, unfortunately, is still under an authoritarian regime ([The Economist Intelligence Unit, 2017](#)), where the voice people is not heard but rather muzzled by several means of suppression of freedom, where corruption is ubiquitous, chaos is widespread and education is very poor. Inspired by living in Europe for the last seventeen months I could not believe more that for a nation to flourish in every aspect, realizing democracy is one of the most important priorities that should be taken into consideration.

Since its birth, the objective of democracy, as we know it, has always been to give a voice, through elected representatives, to the people belonging to a nation, a region or in ancient times to a “city-state” (such as Athens or Sparta in ancient Greece where the concept of democracy was born). After centuries, the nature of democracy remained the same in a world where city-states became towns and big metropolis and people became citizens with rights and duties.

However, to meet the expectations and needs of citizens had become a difficult task for governments and as a result, citizens feel left behind. Therefore, the mechanisms of democracy turned out to be part of a not-always effective system and the necessity of developing a new form of expression and socio-political participation for citizens is becoming more urgent as the days pass by.

To create a strong and lasting civic engagement is the first step to increase public participation in decision-making processes. Indeed, civic engagement empowers citizens to highlight and set their own priorities in the political agenda and allows them to influence the decision-making process ([Reuben and Levy-Benítez, 2005](#)). In doing so, it also urges governmental institutions to consider and embrace needs and requests raised by the citizens benefitting inclusivity and development ([Reuben and Levy-Benítez, 2005](#)).

Public participation and civic engagement encourage citizens to actively come together by planning and organising meetings, social events, initiatives in order to collect proposals to later submit to the authorities attention. Moreover, supporting these initiatives results to be beneficial also for the governments and municipalities. It allows them to get really in touch with the needs of the citizens and to arrange their agenda taking into account proposals which have been already discussed, organised and proposed by the citizens in this specific case, through an organised data collection given by using a public participatory platform. Finally, it can be also considered by government and municipalities as an important tool to keep political stability. Civic engagement makes citizens an active subject in the political arena.

Lately, it has been noticeable that public involvement is a key towards realizing democracy. Governments, local and state-wide, are adopting civic engagement for people to get involved in decision making, and it has been proven that when people are involved in decision making it can give positive results for many reasons (Irvin and Stansbury, 2004). First because when citizens are involved in decision making it facilitates the acceptance of the taken decision because people were involved throughout the whole process. Second for the sake of transparency, since now governments are favouring open data for the people to be capable of seeing the data the governments have been collecting.

## 1.2. Use Case - Red Cívica Local, Valencia

The study in this thesis project is performed in the city of Valencia, Spain, the capital of the Valencian autonomous community and the third largest city after Madrid and Barcelona (Wikipedia contributors, “Valencia”, 2018). Valencia is a beautiful Spanish Mediterranean city famous for its long history, being bilingual (Spanish and Valencian), special popular traditions and exceptional celebrations and its beautiful beaches and good weather around the year.

The current research has the aim to show the relevance and the significant outcome arising from the development of civic engagement and the use of public participatory platforms. More specifically, this study has the precise objective to define how the current citizen participatory platform can improve the decision-making process in the city of Valencia.

This goal will be achieved by creating and implementing an open source platform which will encourage public participation in decision-making processes for the citizens of the community of Valencia. The project is called “*Red Cívica Local*” and it is supported by the city council of Valencia and by the members of the Master of Science in Geospatial Technologies of the University Jaume I of Castellón de la Plana, Spain.

### 1.3. Research Question

The research question in this thesis project is “*How can the current civic engagement platforms improve the municipal decision-making process in Valencia?*”

There is no one simple solution to improve civic engagement. In this thesis project, the scope is the area of Valencia city and the thesis project study is part of an ongoing project in Valencia that is mentioned in details in [Chapter 4](#). Trying to find the answer to this question there is no straightforward solution as arguments supporting civic participation highlight the benefits from the process itself in addition to the outcomes, therefore if the citizens’ trust in government is not present, there are no strong social ties, and also other factors, active e-participation will be affected negatively (Lee and Kim, 2014). It is also important to say that the whole democratic process and the good intentions of doing such an endeavour is empowering by itself.

### 1.4. Thesis Organization

To conclude the introduction chapter, it will be explained how this thesis dissertation is organized. The dissertation is composed of eight chapters, including this introductory chapter as the first one.

[Chapter 2](#) is the background chapter, in this chapter it is explained some definitions that are used through the rest of the thesis study, followed by the result of the state-of-the-art research on the current technology solutions and a brief summary about them and their potential. Moreover, in the background chapter, it will be explained that for the sake of the study some platforms will be selected and a comparison matrix of their available functionality will be created so as to select one platform at the end and this platform will be used in the rest of the study to do the evaluation.

[Chapter 3](#) is the methodology chapter in which the whole methodological approach adopted in this thesis project will be abstracted and explained in text and in a concise chart.

[Chapter 4](#) is the longest chapter of this thesis as it includes a detailed explanation about the use case used in the thesis project. In this chapter, the results of the methods used will also be demonstrated and explained.

[Chapter 5](#) is concerning the implementation of the methods, it is the technical specifications of the platform chosen, the technical details of the process of customizing the platform chosen to fit the use case of Valencia and the deployment steps in great details. This chapter can be the handbook that can be used by future scholars who want to build up on top of this research.

Chapter [6](#), [7](#), and [8](#) are the standard validation, discussion and conclusion chapters.

## 2. Background

The work presented in this research is based on the premise that the ongoing participatory platform (Red Civica Local) can improve the decision-making process in Valencia. Then, how is it possible to achieve this? Firstly, Globalization and technological innovation are nowadays at the base of development almost everywhere. Countries, governments and private companies are investing regularly in the implementation of projects able to offer rapid and effective responses to the needs of communities and private citizens. However, investing in projects and in various sectors is not enough when the major beneficiaries (communities and citizens) are not actively involved (Irvin and Stansbury, 2004).

Lee and Kim (2014) recommend for local governments to facilitate the “individual social capital” to enhance the participation of citizens. Individual social capital is the individual role of each citizen in the dimension of social networks among other dimensions (Lee and Kim, 2014). Therefore, when we refer to projects that aim to improve the decision-making process by involving citizens. Moving in this sense towards an idea of deliberative democracy in which the government is not only for and by the people but it also belongs to them “government of the people” (Fung, n.d., p.17), participation and involvement are not enough (Fung, n.d.). In this case, it is essential the existence of strong and long-lasting civic engagement. When it comes to explaining this concept, which is extremely important for this research, there are several factors to take into account. Firstly, authors of different studies have provided over years several definitions of civic engagement. The philosopher Putnam provides a broad definition of civic engagement by including in the concept “from reading newspapers, political participation, social networks and interpersonal trust to associational involvement” (Ekman and Amnå, 2012, p.284), which he connects with both a market economy and democracy itself. Alternatively, Adler and Goggin in their work *What do we mean by Civic Engagement?* explain clearly that the definition is dependant on the perspective and objectives of who wants the definition (Adler and Goggin, 2005, p. 238). For this reason, there is a wide range of definitions for this term as we can think about civic engagement as collective action, as political involvement, like community service or more generally as social change.

As Adler and Goggin explain, civic engagement can be simply defined as “the interactions of citizens with their society and their government” (Adler and Goggin, 2005, p.241). For the

purpose of this research, in which the project presented aims to improve the decision-making process by involving citizens through the platform Red Cívica Local, civic engagement is also connected to the idea that “an active citizen participates in the life of a community in order to improve conditions for others or to help shape the community’s future” (Adler and Goggin 2005, p.241).

Innovators from the government and the civilians reconsider enhancing the citizen engagement for many reasons: (1) the social gap is increasing between citizens and the government, (2) the government alone is lacking of capability of handling problems of public objectives, and (3) because the civic society has proved its power by many successful projects nowadays (Fung, n.d.).

Therefore civic engagement is not only vital for this project but it represents also an essential condition to develop a more deliberative democracy, participative initiatives and ubiquitous empowerment for the citizens of Valencia.

## 2.1. E-democracy and Open Source Democracy

To be able to discuss the benefits of civic engagement through civic engagement, it is necessary to introduce the e-democracy concept. Due to the calling for immediate and effective responses from governmental institutions required by citizens, the use of technological tools which are able to provide functional service results regularly more indispensable. The idea at the base of e-democracy is to use technology, online platforms, websites, surveys, e-journals to facilitate the access and participation of the citizens to the mechanisms of democracy.

As mentioned before, active participation is promoted by a strong civic engagement, therefore by providing to the citizens a service through which increasing their engagement will foster their interest and commitment in taking part in the new form of democracy: the e-democracy. In doing so, the main advantages of using a participative platform based on civic engagement are having access to decision-making processes, information and transparency, putting in place new forms of voting and to use an effective strategy of categorizing and prioritizing the matters of citizens. In particular, this last point results directly connected with the project Red Cívica Local, analysed in this research and implemented for the municipality

of Valencia. Starting from the assumption that governmental decisions are made to benefit the city and the citizens, the actual engagement of citizens in choosing which matters have to be considered priorities among all (through meetings and discussions as it will be explained later on in this thesis), will improve and simplify the mechanisms behind the processes of socio-economic and political decision-making. It will also advantage the governmental institutions, which will have a clear idea of what citizens need and want.

Other advantages and benefits from including and investing in civic engagement can be retrieved also from projects and studies that have been already launched. In the article *Networking Democracy?, Information, Communication & Society*, the authors explain how virtual areas such as social networks can be considered the new well-known “Habermasian public sphere” (Loader and Mercea, 2011. p.758), in which citizens are now able to be no longer passive consumers but actors active in sharing alternative perspectives, opening up discourses and publishing their opinions (Loader and Mercea, 2011). Moreover, citizens are able to be recognised and receive social support thanks to and through social networks (Lee and Kim, 2014).

Similarly the project Red Civica Local, by being a flexible and interactive platform, reproduces the mechanisms of a real social network and provides services used to empower citizens by giving them the voice that actually can make an impact. Another advantage is to be inclusive and therefore to be able to recognize “the influence of social diversity” (Loader and Mercea, 2011. p.760).

These are the main benefits gained from using participative platforms which are indeed inclusive and effective and most importantly they can be also long-lasting due to the important civic engagement, the real secret behind their success.

Rushkoff (2003) has coined the term open-source democracy inspired by open-source software and in his writing, he contrasted software and democracy in the open-source setting in a creative way.

It is very interesting how this philosophy is just like the open-source software development that any interested person can create policies like a wiki page which makes the maximum benefits of the collective wisdom of the citizenry in enhancing democracy and decision-making (Wikipedia contributors, “Open-source governance”, 2018).

As imagined by [Rushkoff \(2003\)](#), open-source software and proprietary software are corresponding to the open-source democracy and classic democracy. Open-source software development is a participatory process by itself. The code is open for everyone to contribute to a collaborative environment. In the open-source development, developers can correct each others' mistakes rather than competing for who is better when the software is published along with its source code. No one is hiding how their program works and everyone is benefiting from the multiplicity of thoughts and ideas. As opposed to proprietary software solutions where a lot of effort is exerted in protecting the secrecy of the underlying source code. An example is Microsoft Windows which is an extremely sophisticated inefficient operating system for which arbitrary decisions to change feature or functionality can be made and end users simply adapt to that sometimes without even knowing that these decisions have been taken ([Rushkoff, 2003](#)).

Rushkoff believes that the current technological age is the second renaissance and that a profound shift in the relationship of people with governance has been witnessed. He gives an example that people used to just adhere to the map (decisions) that is drawn by decision-makers, but now they can draw this map by themselves and be the decision makers. These decisions that can be our future are implemented by people that regular citizens can influence by their own ideas and decisions.

Open-source software developers (here they correspond to empowered citizens) are having this sense of responsibility and consciousness as they can see their decisions in contributing few lines of code can affect the lives of millions of people. An example, if a developer is contributing few lines of code to Linux operating system, it will inevitably affect the millions of users they are using it, therefore, it can make these people's lives easier and can also expose them to software security threats that can also literally ruin some people's lives.

The analogy between open-source software and open-source democracy is quite intriguing and makes it easier to imagine how it would be to have open-source democracy adopted by governments. The current research and project “Red Cívica Local” is a sort of local government open-source democracy as it allows any citizen to voice their interests through an inclusive channel. The call of other citizens to vote pro or against that proposal and at the end



the local government is obliged to adopt the proposal whenever it is supported enough by the citizens.

Benitez-Paez et al. (2018) while discussing the success of the Open Government initiatives, stresses on the importance of public engagement. Which consequently results in the importance of motivating participants. Additionally, in the maturity model introduced by Lee and Kwak (2012), the highest level of open government is the ubiquitous engagement. Being a potential part of a comprehensive open government initiative, in order for Red Cívica Local to reach this model, focuses should be on increasing participation and collaboration, making it available for citizens through all types of computing devices like smartphones and tablets. The project Red Cívica Local has a potential objective to realize digital democracy as a means of a social networking and in the next section will be explained the motives of the implementation of this platform in Valencia.

## 2.2. Why Implement a Civic Engagement for Valencia?

The city of Valencia in the last two decades has been characterized by a process of continuous development. From a mainly agrarian area, it has become an important centre of tourism and finance. More specifically the city has drastically improved the services sector to the point that already in 2009 “almost 73% of the economically active population was employed in the services sector” (Caponio, 2009, p.11). By pursuing a rapid growth in economic development and by increasing local entrepreneurialism also the construction and real estate markets have improved. All these factors have produced a rapid urban development and the necessity to rethink in some cases to a new type of urban planning (Prytherch and Maiques, 2008).

To deal with such a positive transformation over the years, the members of the local administration had initiated a process of adaptation to the new needs of citizens and of innovation. Through implementing neoliberal policies which foster entrepreneurialism in all its forms, Valencia has been transformed into “a place of reference for a multiplicity of economic activities” (Caponio, 2009, p.11). Because of these reasons, the local government and public institutions are now investing not only in tourism and commercial companies but also in more technological projects through which the city of Valencia aims to become that innovation—symbolized by the Marina de Valencia (Valencia Extra, 2018).

These kinds of projects are characterized by variety and inclusivity which foster the active participation of citizens and increase their civic engagement. More specifically, civic engagement is used as a strong base in the process of exchanging knowledge and information about issues that affect Valencia and its citizens, along with proposals to solve them. In doing so, formal and informal media can be used (Connor, n.d.). One of the tools that the municipality of Valencia has decided to use in this context in order to exchange information and to increase public participation, is the project Red Cívica Local, currently discussed in this thesis. Including citizens by actively listening to their proposals or to present issues can bring major benefits to the local government. This kind of consultation implies techniques such as “community and organizational profiles and sample surveys” (Connor, n.d., p.253). Moreover, it is useful in many occasions, for instance, it opens to listen to alternative solutions for a matter which have to be discussed, it fosters providing evaluations to policies already implemented but maybe not effective, it keeps citizens informed and it highlights the existence of new issues (Connor, n.d.). Adopting this kind of project will involve also a shift to a more direct type of democracy.

This decision is driven by the strong willing to invest in innovation and to engage citizens in the processes of making decisions and because of that, Valencia is now developing the field on technological innovation. When technological innovation concern governmental decisions and citizens, an effective participative platform can be a functional solution. Red Cívica Local is a part of a more comprehensive plan project series aspiring complete intelligent solutions for Valencia<sup>1</sup>. The project itself does not have the aim to completely transform the nature of the local government of Valencia, however, based on a strong civic engagement, it aims to produce a more active form of public participation in the decision-making process.

This concept, as already mentioned, belongs to a new frame of doing politics, in particular, the e-democracy. As Lee and Kwak (2012) state, *An Open Government Maturity Model for social media-based public engagement* “As social media is widely adopted by the public, it can play an important role in implementing open government” (Lee and Kwak, 2012, p.492). The participative platform designed for the citizens and the municipality of Valencia is indeed

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<sup>1</sup> Ajuntament de València. (n.d.). Red Cívica Local. Retrieved February 21, 2019, from <http://smartcity.valencia.es/vlci/red-civica-local/>

an actual social media, which is an online tool “designed for and centred on social interaction” (Lee and Kwak, 2012, p.492). Some of the key factors which characterised this project and that the municipality of Valencia consider important goals to achieve are open participation, open collaboration, ubiquitous engagement and data transparency (Lee and Kwak, 2012, p. 496). For the two authors, these conditions represent also the different stages that a society has to pass through in order to achieve a complete open government maturity.

Of course, some of the challenges that have to be faced are first of all the adoption by the public (and this one of the reasons why it is essential to create a strong and long-lasting civic engagement), then technology (the platform must be effective, easy to use and manage), budget (public funds are at the base of these kinds of initiatives), and finally timely-response. Nonetheless, despite all these challenges, the reasons that Valencia has to implement this new project are many and valid. It becomes the virtual place through which meetings and assemblies are held. Through the platform, citizens can share information about everything that concerns the city, can point out relevant problems and indicate solutions. It is inclusive and open. It brings benefits to the governments as well as by engaging and delegating citizens will save time and money in the process of prioritizing which question is more important (citizens will be the ones who will do it). Moreover, it facilitates top-bottom relations in society and in doing so it is expecting to produce more popularity and consensus for the municipality of Valencia.

### 2.3. Current Technology Solutions

In the era of technology and the Internet, good research on what software solutions are available is becoming more important for many reasons. Simply the aimed software solution might be there on the internet and available for use without any needs for customizing, therefore anything other than just using this software would be just reinventing the wheel. This software might be cheap therefore buying it would be a wiser decision than creating something from scratch. It is also probable that this software solution is an open-source one which means that it can be supported by the community and that the code is publicly available. Some open-source software solutions come with permissive licenses that allow editing the software for commercial and non-commercial uses. In any event, before being very optimistic, in this section, the purpose is to decide whether start software development from the ground up or

just use a platform that is already there— maybe with the possibility to use open-source software and modify it to fit for the purpose of the study.

Through a Google search using the terms "citizen engagement platform", "public engagement platform" and "civic engagement platform" it has been found many platforms out there on the internet.

Some of these technology solutions, which allegedly are implementations of effective civic engagement platforms, are specialized in some aspect of the engagement process.

PublicInput ([PublicInput](#), n.d.) is specialized in community engagement by publishing the projects for participants to engage by voting, commenting, or joining public online meetings and doing data analytics on the engagement data to understand patterns and make decisions.

NETPopulis ([NETPopulis](#), n.d.) platform is a communication CRM platform that can be used to engage citizens in a multi-channel two-way communication through e-mail messaging, and text messaging and other ways. MetroQuest ([MetroQuest](#), n.d.) as featured on their website is specialized in designing attractive engaging surveys and the capability to reach out to thousands of online users. It also comes with analytics software and a dashboard to provide insights on the data collected from the surveys in the form of statistics and charts.

Another platform which is basically a mobile application the citizens can download and through this application, the administration can deploy unlimited customized engagement applications from a pool of apps provided by the platform mostly 311 (Municipal Services)<sup>2</sup> or CRM services, it is called CitySourced ([CitySourced](#), n.d.).

There is an Australian company that is customizing Microsoft Dynamics 365<sup>3</sup> into a citizen engagement product ([Veritec](#), n.d.), their platform is inspired from the CRM (Customer Relationship Management) concept which evolved to be Citizen Relationship Management ([Schellong, 2005](#)) in which the customer is the citizen and the focus is on the relationship between the government and the citizen in public services.

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<sup>2</sup> Wikipedia contributors. (2019, January 09). "3-1-1". Retrieved February 17, 2019, from <https://en.wikipedia.org/wiki/3-1-1>

<sup>3</sup> Microsoft. (n.d.). "Microsoft Dynamics 365 - Intelligent Business Applications". Retrieved January 3, 2019, from <https://dynamics.microsoft.com/en-us/>

On a more comprehensive level, out there there is a bunch of other platforms which are pretty rich with functionalities and are good endeavours to be more inclusive of civic engagement functions. Governing Institute surveyed 2006 citizens and 125 local government officials to conclude that 40% of the citizens prefer one-stop service for all government non-emergency services (Governing Institute, 2017).

To give some examples on on-stop platforms there is engagementHQ (Bang the Table, n.d.) is an Australian company, 67engage (Thornley Fallis Communications, n.d.) from Thornley Fallis Communications and another example is CitizenLab (CitizenLab, n.d.) which is headquartered in Belgium.

One common element was found with all the aforementioned platforms, that they are proprietary software solutions. These platforms' providers have a base product and based on the next client's needs they create semi-custom applications that will cost differently for each client, the pricing and the pricing scheme are not transparently exposed. If someone is interested in their products they submit a demo request and then their sales department in coordination with their technical team contact the client, create a custom demo for this client and based on the needs they charge for their product.

No further investigation was made to check their prices nor whether the providers also provide the source code or not. An open source solution is an important element for a completely transparent civic engagement solution and also a principal requirement for Red Cívica Local to start the development from an open-source platform, and this does not necessarily mean the final product should be open-source. Whenever the source code is available for the public, stakeholders can know how their information and data are handled.

Starting from there and in order to find the open source alternatives for civic engagement platform and doing a similar search like the previous one adding the word open source, therefore, the search term will be {civic engagement "open source"} including the quotes in search text for searching the exact phrase. On the top results, Consul project can be seen, which is Madrid's implementation of a civic engagement platform for the city which is actually up and live at the time of writing this text at Madrid and the instance of Consul is called "Decide Madrid" which is the Spanish for "Madrid Decides". The city of Madrid launched "Decide Madrid" in September 2015 and it made a difference and now Consul is a

big community in Madrid and a lot of people are contributing to maintaining the current functionality and even developing new functionality (Peña-Lopez, 2017).

Six months later the capital of Cataluña, Barcelona followed a similar manner and built “Decidim Barcelona”, Catalan for “Barcelona we Decide” their own version of the civic engagement platform based on the codebase of Madrid’s project Consul. And this is a live example of how the open source software can come in handy especially to avoid reinventing the wheel, because what happened is in Barcelona they started off from Consul which was an available open source platform but they found out they have to change a lot in this project and for that they started a new branch built on top of Madrid’s Consul and they built their own new thing and it has now even a new name, all of that thanks to the open source mentality and the quite progressive license type Consul chose from the beginning.

Consul and Decidim apparently look very promising in our use case especially because they were also a recommendation from the city council of Valencia to take them into consideration in the state-of-the-art research looking for the most convenient platform for Red Cívica Local project. IDOM<sup>4</sup>, the contractor working together with Valencia Municipality on the project suggested during the kickoff meeting (detailed in [Chapter 4](#)), that Communecter (Pixelhumain, “Réseau sociétal citoyen”, n.d.) can be a competitive candidate for the research.

Moreover, as per the meeting with Valencia’s city council, they advised that they have Esri ArcGIS Enterprise infrastructure<sup>5</sup> as their Open Data implementation. For that reason, ArcGIS Hub<sup>6</sup>, Esri’s implementation for community engagement software, might be also a good fit for their project as it will also smoothly integrate with their underlying data. The city council of Valencia has recently bought an expensive Liferay<sup>7</sup> license for implementing their CMS which they also suggested for the research.

Before taking the city council’s recommendations into account, preliminary research on the three recommendations was executed and the result is the following:

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<sup>4</sup> IDOM. (n.d.). Retrieved February 18, 2019, from <https://www.idom.com/>

<sup>5</sup> Esri. (n.d.). ArcGIS Enterprise. Retrieved January 31, 2019, from <http://enterprise.arcgis.com/en/>

<sup>6</sup> Esri. (n.d.). ArcGIS Hub. Retrieved December 23, 2018, from <https://hub.arcgis.com>

<sup>7</sup> Liferay. “Liferay Digital Experience Platform (DXP).” Liferay, Retrieved December 23, 2018, from [www.liferay.com/en/products/dxp](http://www.liferay.com/en/products/dxp)

Communecter is an open source civic social network already online and is used and active in France and especially in Réunion, a French department in the Indian Ocean, where the platform was born.

ArcGIS Hub by Esri is a different model of a community engagement software basically based on GIS and integrates with other ArcGIS products and services like ArcGIS Server, Portal for ArcGIS, ArcGIS online and many more other ArcGIS products which create their own ecosystem. ArcGIS products suite is proprietary by Esri and is quite expensive, however, they are available at the city hall with an enterprise license and also is available at UJI, therefore, it is included in our research just for reference or future studies however it will not be our solution at the end of the day because first, ArcGIS Hub's architecture is far from being a civic engagement platform in a form social network which is something essential in the platforms that can be candidates for this study. In addition to that, being a proprietary software makes it impossible to modify it and it should be used as is as and for that open source solution will be favoured.

Liferay is an enterprise portal built as an open source software and it's a more abstract modular solution for building enterprise solutions.

Eventually, the potential platforms that are chosen to go to the next step in our study are:

- Consul
- Decidim
- Communecter
- Liferay
- ArcGIS Hub

## 2.4. Introduction to Red Cívica Local

This research study is supported by the use case of an ongoing project in Valencia city called “**Red Cívica Local**”, Spanish for “**Local Civic Network**” and it is a subproject under a bigger project called “Valencia Ciudad Inteligente”, Spanish for “Valencia Smart City” launched by the city hall of Valencia aimed to accelerate the achievement of smart city strategic plan (Vilarrasa, 2016).

UJI is involved in Red Cívica Local with the city hall of Valencia and thanks to this affiliation, it was possible to execute the methods of this research on Red Cívica Local use case.

The main objective of Red Cívica Local is to create a platform for citizens, organizations, and institutions to connect together, share important information, and facilitate collaborative work. Not only that but also a platform for connecting citizens with the administration in a channel that is inclusive to everyone where everyone can express their interests and opinions freely. Citizens can monitor the work of the government, propose ideas and suggest improvements.

Moreover, the platform will make it available for the associations to practice their own activities and projects in a virtual space within the platform while making it available for the citizens to debate and contribute to promoting participation and social interactivity.



### 3. Methodology

In this chapter, will be explained the methods and tools that are used and executed to tackle this research project.

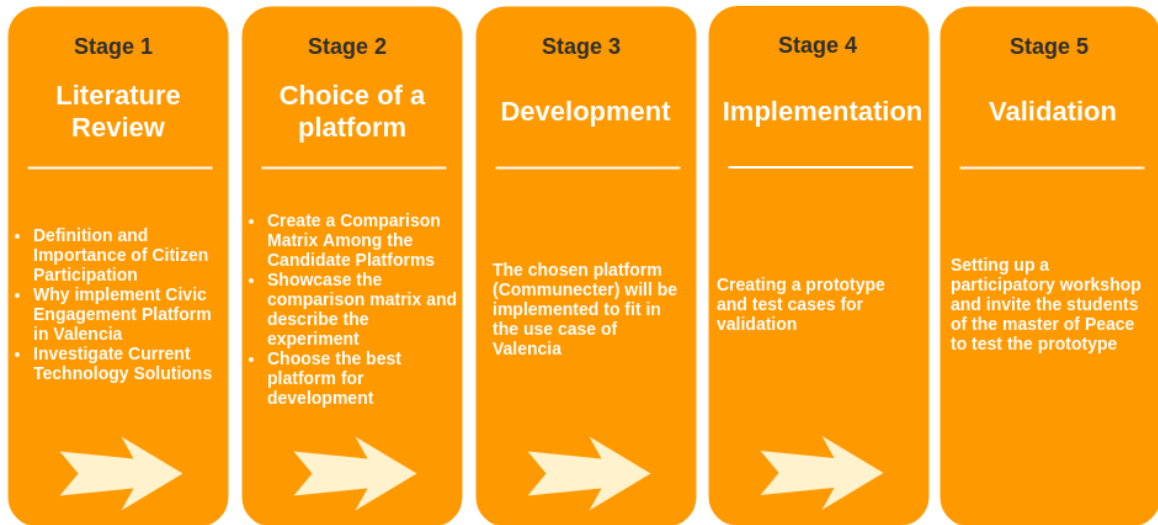


Figure (1) - Methodology Stages

This research project’s method is broken down into five stages as depicted in [Figure 1](#).

#### 3.1. Stage One - Literature Review

**The first stage** of this research is a literature review. In this stage principally, definitions are explained and significance and importance of terms are presented. It is also explained why Valencia is implementing in such a project and it is discussed its objectives. Investigation about the current available civic engagement platforms is executed. As a result of this investigation, few platforms are going to be the input of the second stage of the methodology of this research.

#### 3.2. Stage Two - Choice of a Platform

**Stage two** of this research project is concerned with choosing a platform from the former stage in order to use it for creating the prototype for Valencia. This stage is illustrated in [Figure 2](#).

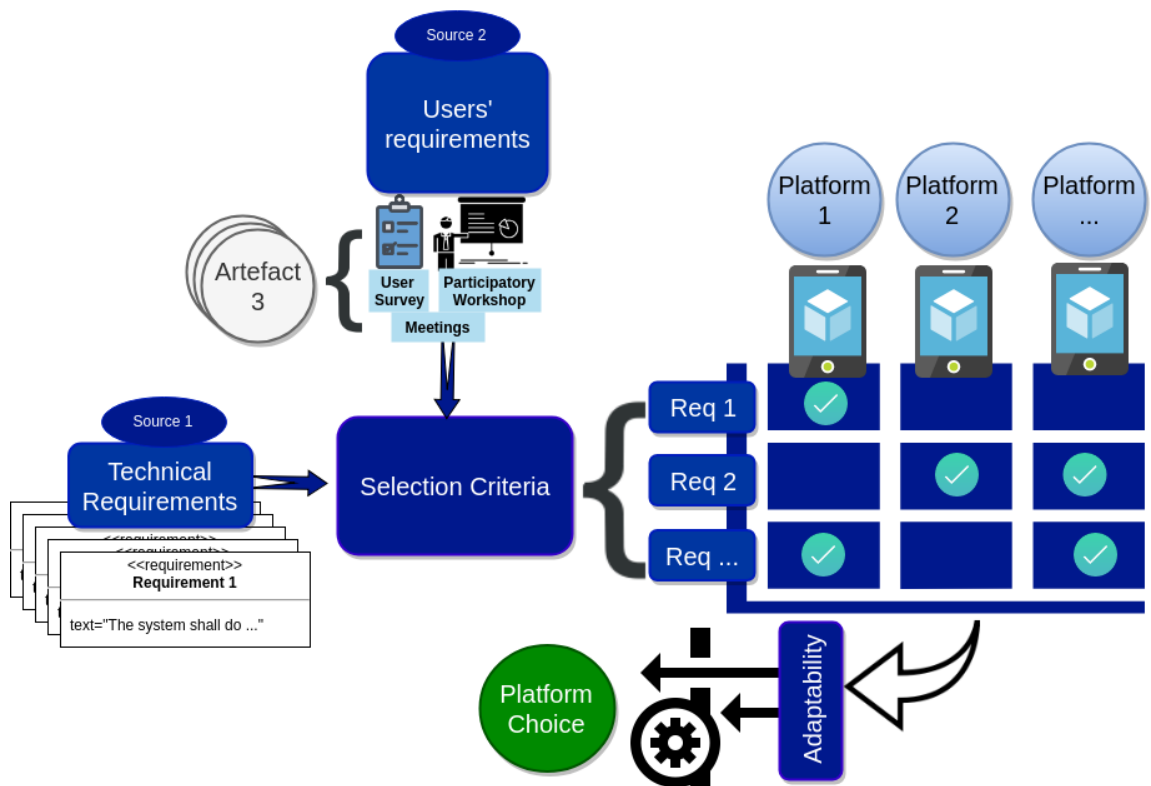


Figure (2) - Platform Choice Procedure

Choosing the most convenient platform for the study is based on three factors:

### 1. Technical requirements from Red Cívica Project

The requirements from the Red Cívica Project developed by the city council of Valencia will be very important to take into consideration how much the chosen platform is covering from these requirements as this will first make the platform more accepted by the city council officials and secondly will make the development of the complete platform at the end an easier task.

### 2. User requirements

Red Cívica Local project development process incorporated many artefacts. From them will be mentioned the **three artefacts** that were related to this study and later in [Chapter 4](#) their details and results will be also detailed:

- Kick-off Meeting
- Surveying the citizens' associations' members
- Participatory workshop for the citizens' associations' members

These three steps are used to help select the platform that will be used in the later stages of the study.

To simplify the process [Figure 2](#) is exhibiting how the artefacts are utilized to infer which platform is the one will be used.

### 3. Platform adaptability

This factor can make a significant difference in developing new features, edit the current features of the platform or simply maintaining the platform by fixing bugs or scaling it in the future.

Since the platform is open source and will be maintained by the city council itself or rather by the community at large, it is important to make sure the chosen platform underlying technology is popular and supported at the global scale. One more subfactor in the adaptability is the platform design if it supports modularity and maintainability therefore whenever it is necessary to scale the platform up or to add new functionality to its codebase it would not be drudgery.

One example of the adaptability is whether the platform supports localization<sup>8</sup> in a modular way that is easy for adapting it to support more languages like in the case of the study, Spanish and Catalan.

Details of the platform adaptability will be also discussed in [Chapter 4](#).

## 3.3. Stage Three - Development

**In Stage three**, the development of the selected platform (Communecter) based on the technical elements will be executed, therefore, it will be available for experimenting. In other words, the platform is going to be deployed in a real environment with a real database and the necessary server technology, configuration and tuning. Details of development are in [Chapter 6](#).

## 3.4. Stage Four - Implementation

**The fourth stage** is the implementation stage is actually putting all the research done in the last three stages in practice by the development of a prototype of real-life test cases that citizen associations can face. These test cases will be real scenarios with steps to perform in

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<sup>8</sup> Wikipedia contributors. (2019, January 18). Internationalization and localization. Retrieved February 18, 2019, from [https://en.wikipedia.org/wiki/Internationalization\\_and\\_localization](https://en.wikipedia.org/wiki/Internationalization_and_localization)

order to complete some tasks associations' administration or participants need to do to exercise their activities.

For the implementation, the platform functions that will have the focus will be, events, projects and the map. These specific three functions were tested by the team and in order for them to be tested, other functions of the platform were also tested. The platform after getting developed and deployed from [Stage three](#) for getting it ready for validation stage it had to be ready by executing the following test scenarios:

- Platform Entity: User
  - Registering a user (Citizen) on the platform and adding his/her information.
  - Logging in and out
  - Adding user information and the ability to modify it
  - The ability to create projects, organizations and events
  - The ability for user to join projects or organizations
- Platform Entity: Organization
  - Creating an organization
  - Creating an event through the organization
  - Creating a project through the organization
  - Adding organization information and the ability to modify it
  - Localizing the organization on the map.
- Platform Entity: Project
  - Creating a project
  - Creating an event through the project
  - Adding project information and the ability to modify it
  - Localizing the project on the map
- Platform Entity: Event
  - Creating an event
  - Adding event information and the ability to modify it
  - Localizing the event on the map

The post-validation survey ([Stage Five](#)) was designed to allow participants to test the platform as a whole while focusing on three functions, events, projects and the map.

### 3.5. Stage Five - Validation

**The fifth and the final stage** is the validation stage in which, candidates are invited to a participatory workshop to help execute these test cases created in stage four and provide feedback in the form of an interactive discussion and brainstorming and also a survey that is created to measure qualitative aspects of the platform.

The original plan for validation the developed prototype was to have the very same potential end-users (including citizens associations and also people who are not parts of associations) of the final project “Red Cívica Local” to start working on the platform for a period of time. They would be exercising their daily activities which they do within their associations or among them and the city council regularly but using the platform. After this time they would be asked qualitatively about their experience with the platform and analyse their activities on the system to get insights and feedback about the effectiveness and efficiency of the platform.

This plan was far from getting achieved for reasons of tight time and that it was needed to conclude the study for my master thesis to get submitted on time.

At UJI, there is a master program called “The International Master of Peace, Conflicts and Development Studies”. And as obvious from its name the master program is basically about peace studies and conflict transformation. However, the program is also concerning more topics that are correlated with peace like, to mention a few, human rights, democracy and peaceful communication (UJI, "University Master's Degree in International Peace, Conflict and Development Studies", n.d.).

The students of this master program are mostly quite interested in and enthusiastic about the aforementioned topics, they are very critical when its about democracy and equality. Some of them either worked or currently working for NGOs, for these reasons, they were chosen to take part in a participatory workshop.

During this workshop they test the developed prototype where a presentation about the project is given, highlighting its significance in improving the decision-making process and the deliberative democratic process in Valencia for getting them motivated (presentation slides and photos are in [Annex 7](#) and [Annex 8](#)). They are given a walkthrough tutorial on how to use

the platform and eventually allow them to project the available tools and functionalities of the platform on their aimed objectives. Following these activities, takes place an interactive discussion about their experience with the process as a whole and they are be asked to fill in a post-workshop survey.

To get the students to register in the participatory workshop, a graphical brochure was created highlighting the importance of the study ([Annex 4](#)). The brochure was sent to them along with the invitation to get registered by a google form through the official channel in the university and also casually through social media. The invitation message is available in [Annex 5](#).

The master program is bilingual so it is taught in both Spanish and English for that the brochure, the presentation and all the correspondence to the participants were in the two languages.

The students that were invited for the workshop are around **60** students, they have been approached as well through their WhatsApp group. **12** people registered for the event and **10** people showed up at the end.

The workshop was planned to last for two hours, and the program of the workshop is as follows:

1. 15 minutes - welcome participants, tell them about the department where the research is taking place, tell them about the objective of the workshop and why they were there and finally introduce the platform, its objectives and its potential users.
2. 15 minutes - show the participants the platform in action and showcase its tools and functions.
3. 10 minutes - allow the participants to create their users and check by themselves what the platform is offering.
4. 40 minutes - let the participants pretend to be someone from the community and create some activities, projects, events, etc on the platform.
5. 10 minutes - fill a survey about their experience using the platform.
6. 20 minutes - reflect and discuss the efficiency and effectiveness of the platform.

The post workshop survey ([Annex 9](#)) was meant to qualitatively measure participants' sense of importance to the different platform functions and also their satisfaction.

Survey questions were developed in English and Spanish. During the workshop the participants were given a choice to be part of an entity (organization, association or anything

else) or just use the platform as regular citizen not affiliated with any entity. The questions asked to the participants were 16 questions including 3 optional questions only for the participants that chose to be part of an entity.

Question 1 ([Annex 9](#)) was asking participants about importance of the platform tools. [Likert](#) (1932) scale with five responses was used to assure variability and understand their degree of opinion. Question 2 is about the general experience with using the platform. Question 3, 4, 5 and 6 are regarding the participants' choice of whether being affiliated with an entity or not. Then the survey is three parts for asking about specific features of the platform, Events, Projects and Map. Each part of those the participants were asked how satisfied they were and whether using the tool was easy or not. Last question was to give the participants a space to write their opinions without restrictions.

As a follow up to the survey participants were engaged in free discussions for 20 minutes before concluding the workshop.

Results of the validation workshop is explained at [Chapter 6](#).

## 4. Use Case - Red Cívica Local

**Context:** In this chapter, the project that is the use case of this thesis research (Explained at [Section 1.2](#) and further at [Section 2.4](#)) will be explained. The results from the methodology related to the use case that were taken to realize the project will be listed, depicted and explained.

Based on the methodology ([Chapter 3](#)) stage 2, a list of requirements should be prepared to be able to compare the available platforms and based on them, other user requirements and adaptability the best platform for the use case can be decided on.

From [Section 3.2](#), the project's artefacts to take into consideration for comparison are:

**The first artefact** of the use case is the kickoff meeting of this project. It was held at Valencia city hall at the very beginning of the project. The attendees of this meeting were the head of transparency and open government, the IT and technology department officials from the city hall and UJI team.

In this meeting, it was an open discussion to set expectations, ask questions, discuss possible potential solutions and discuss the next steps in the project.

The outcomes of this meeting were quite useful and everyone showed enthusiasm and willingness to help. Outcomes can be summarised as follows:

1. Describing in details about the current underlying infrastructure at Valencia city hall giving the development team flexibility to choose what is best for developing the new platform.
2. The city hall has maintained contact with many associations that will work along with the development team including city council entities, NGOs, and associations of different types.
3. The city council asked that the project should be inclusive of all the entities/associations of different sizes
4. The city hall request homogeneity in the graphic user interface to match with the current applications and the city hall branding.
5. The city hall believes a key success for the project is to involve associations in co-design and usability tests as it would be useful for creating community and give the associations visibility.



6. It was suggested to invite the associations for a workshop at the city hall and for that an online invitation and a form to fill to be created for the associations to announce for the event.
7. The city council seconds on the importance of choosing a platform that is both open-source and supports the Valencian language.
8. The city council gives as an example a couple two Spanish platforms in action, Madrid's *Consul*, and Barcelona's *Decidim*.
9. The city council will be responsible for inviting the associations using different forms of communications like emails, social networks, etc, and also the setup of any meetings or workshops after reviewing the content of the invitations and the online form.

Based on point 6 and 9 a project brochure was sent along with an invitation to fill a survey form for the associations to get involved in the co-design of the project via the city council.

Survey response data will be analysed later in this section. The project's brochure included a brief non-technical text describing the project and motivation for the members of the associations to promote collaboration—the project brochure is available in [Annex 1](#) and it was sent in the Spanish language.

**The second artefact** is the survey that was created in both Spanish and Valencian languages, it had an introductory text (translated from Spanish) “*The Local Civic Network will be developed with a collaborative design phase with the non-profit entities that use the project, for which we ask and appreciate your initial involvement, answering these questions on the form, which will help design adapted to your reality. Thank you very much for getting involved!*”

The survey had three sections. The first section had six questions about who is participating and affiliated with which entity or associations and a request to inquire for further questions, or at this point, the participant can just send the form without answering further questions. If the participant agrees to continue they can access the second section which had also six questions.

The third section is about data privacy in which it is explained the data usage and that in case the participants want to delete their data, they can contact the city council.

The questions in the form were as follows (They were created in English and then translated into Spanish and Valencian, and now they are translated from the final version from Spanish to English again):

#	Sec	Question	Question Type	More information
1	1	What entity do you represent or work for?	Short answer text	
2	1	What is your first and last name?	Short answer text	
3	1	What is your position in your entity?	Short answer text	
4	1	What is your email address?	Short answer text	
5	1	What is the web page of your entity?	Short answer text	
6	1	To which sector does your entity belong?	Multiple choice	Choices: <ul style="list-style-type: none"> <li>● Neighbourhood</li> <li>● Cultural</li> <li>● Education</li> <li>● Social Action</li> <li>● Other</li> </ul>
7	1	Do you want to send the answers now or do you want to answer further questions?	Yes/No	
8	2	How do the members of your organization communicate internally?	Multiple choice (Possible to choose multiple answers)	Choices: <ul style="list-style-type: none"> <li>● Whatsapp/Telegram</li> <li>● Email</li> <li>● Facebook</li> <li>● Telephone</li> <li>● Other</li> </ul>
9	2	How do you call events and meetings with the members of your entity?	Multiple choice (Possible to choose multiple answers)	Choices: <ul style="list-style-type: none"> <li>● Through a Whatsapp group</li> <li>● Through a Facebook group</li> <li>● The entity's website allows me to create</li> </ul>

				<ul style="list-style-type: none"> <li>events</li> <li>• Sending invitations by email</li> </ul>
10	2	Do you have any suggestions to make the interrelation between the members of the entity more effective?	Long answer text	
12	2	Do you have any suggestions to make the interrelation between different entities more effective?	Long answer text	
13	2	How do you currently receive information from the City Council?	Long answer text	
14	2	What would you need to improve the visibility of your entity?	Long answer text	
15	3	Data Privacy Disclaimer	Yes/No	

Table (1) - Associations Survey 1

**54 responses** were received for this survey, 1 response of them was a test response, 2 responses from city council participants (they count as moderators, not participants), that leaves us with **51 valid response** from participating associations.

17 responses (38%) come from Social Action associations, 7 responses (16%) come from neighbourhood associations, 4 responses from cultural associations, 3 responses each for associations that categorize themselves as educational and health. The rest of the association sectors in the survey results are environmental, third sector, community development, drug addiction, participation, leisure and tourism, psycho-criminological intervention, culture and education, and integration of the collective of immigrants from all over the world (Check [Figure 3](#)).

Each association submitted one response. But three associations submitted two responses each, and two associations submitted three responses each.

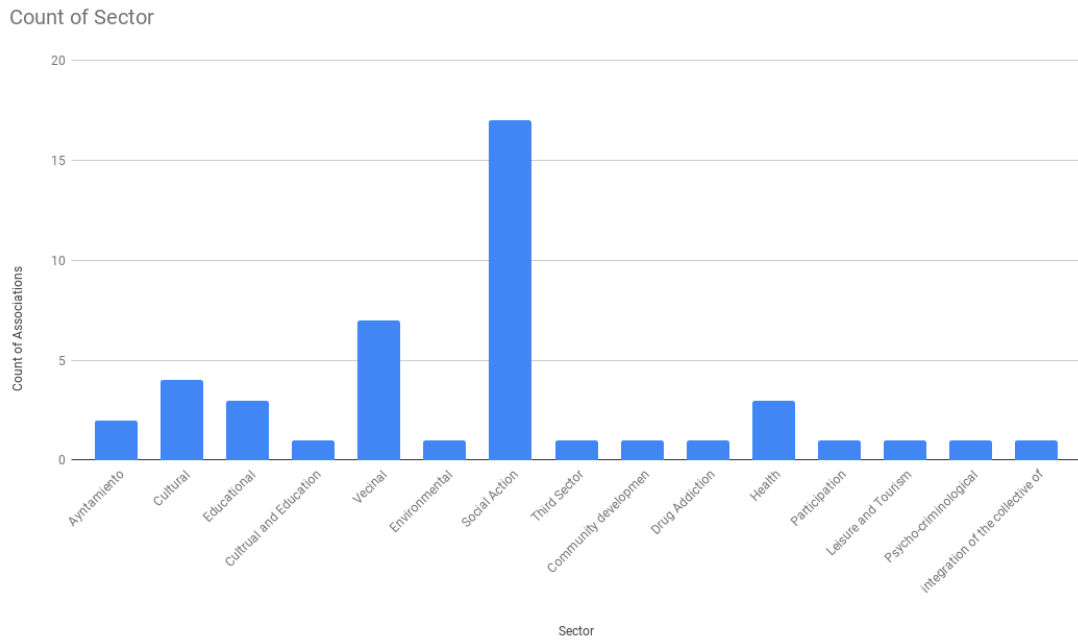


Figure (3) - Number of responses per association sector

24.5% of the respondents are the associations' presidents, 7.5% are secretaries and 7.5% are coordinators. Please check [Figure 3](#) to check the rest of the titles that responded.

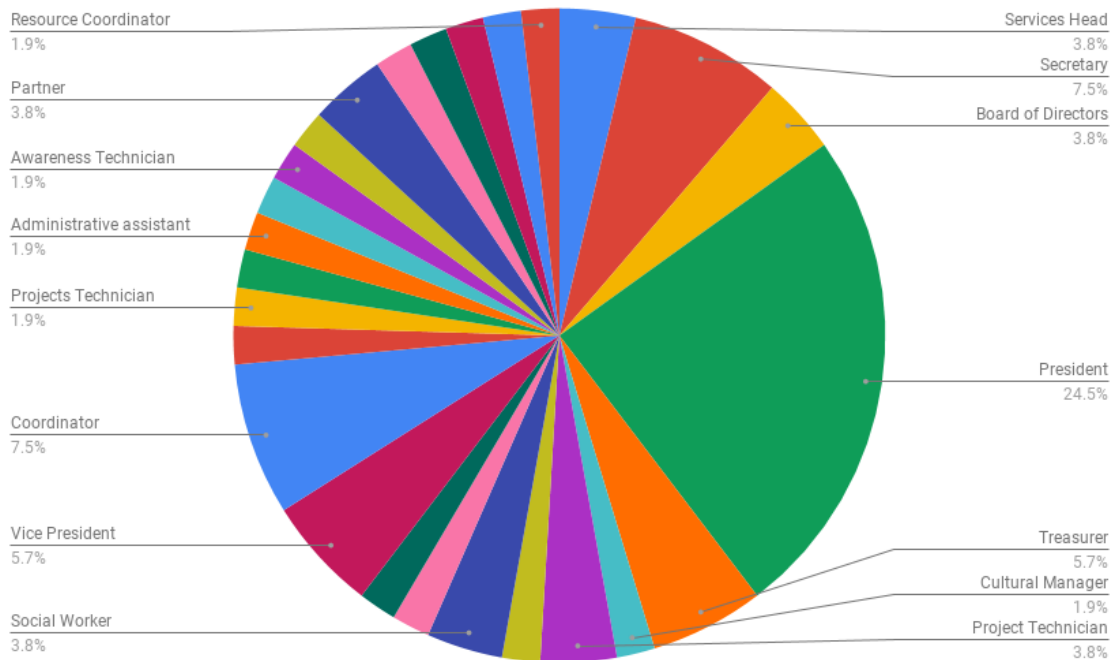


Figure 4 - The job titles of the respondents in the associations

17 participants decided to send the form and they were not interested in answering section 2 questions, but 34 participants decided to continue.

From section 2 (Check [Table 1](#)) it was clear that most of the participants do not have a special platform/communication channel for their inter-association communication and are communicating among other members of the association by means of Whatsapp, Facebook, E-mail or sometimes by doing phone calls. It is also the case when they want to call for meeting or events. Only 6 participants indicated they are using their association's website for calling for meetings or events.

~80% of the participants in section 2 indicated they receive updates from city council in form of email messages while 1 participant indicated that he/she does not receive anything.

We asked participants to suggest or advise about how to enhance communication among associations internally and inter-association and also for them how to gain more visibility.

And their suggestions and recommendations are briefed into:

Feasible comments:

- Web page or web platform for advertising for activities and projects involved.
- Being part of a public entity network that is searchable and accessible.
- Possibility of having joint programs/projects with other entities/associations.
- Having a common agenda that shows the activities of all entities and associations.
- The possibility of setting up formal/informal meetings to discuss projects, common interests or to promote interaction and cooperation.
- Organize events.
- Inclusiveness of everyone in the association not only the representatives.
- Showing volunteering opportunities and the time and effort requirements.
- Having like a communication channel with all associations subscribed to for sharing information like a newsletter.
- Call for recreational activities.
- Sharing information among associations.
- Being able to look for volunteers and participants.
- Advertise for activities and programs undertaken by associations.

Unfeasible comments:

- Daily presence in the entity.
- Members of the associations are of age 60 and above, it's not easy for them to use technology and internet.
- Providing more human resources and materials.
- Physical visibility on building facades.
- A physical space/headquarters for interaction, activities or planning.
- Provide economic support.

## Participatory Workshop

To better understand the requirements of the users a participatory workshop has been organized. An invitation was sent to the community members in Valencia (members of the citizens' associations) that were part of the previous survey.

The workshop presentation was performed jointly by Valencia city council officials and Andrés Muñoz (co-author). The workshop language was Spanish and Valencian, the city council officials and the participants were alternating Spanish and Valencian while the technical team was speaking in Spanish.

The participatory workshop's starting time was after working hours to allow participants to join the workshop even if they are having a full-time job to ensure maximum involvement. It is worth mentioning that Valencian language has 85% lexical similarity with Spanish language ([Wikipedia contributors, "Catalan language", 2019](#)) and both of the languages are the official languages of Valencia.

The aims of this workshop are the following:

- Advertise for the new platform.
- Explain the aims and objectives from the potential platform to the citizens.
- Explain the main functions and tools that will be part of the platform to the citizens and ask for feedback.
- Involve the public— in the form of citizens association by different means like:
  - Involvement by just attending the meeting and understand the platform and how it will change the way the associations are facing their problems within the city of Valencia.
  - Involvement by attending the meetings and know their opinions about the set of functionalities the platform will provide by engaging in question/answer sessions and discussions with the developers of the platform as well as with the city council officials.
  - For whoever from the associations is interested in co-designing the platform along with the city council officials and the developers of the platforms. And that would be through doing live usability tests on a live prototype and later ask them for feedback and evaluation of distinct functionalities of the platform.

The participatory workshop was organized by the city council of Valencia. The participants in the workshop were:

- The number of participants was not recorded but they were over 40 participants.
- Valencia city council officials.
- Technical development team members including myself and two other researchers from UJI.

The workshop lasted for almost two hours and included the following activities:

1. Introduction from the city council officials about the aimed platforms and its political and democratic context and thanking the participants for attendance.
2. Presenting the high-level objectives of the platform and the agenda of the workshop.
3. Explaining the current situation regarding the associations in Valencia and introduce the proposed solution.
4. Explaining the potential use and the potential actors(users) in the platform in the form of use cases and graphical images.
5. Motivating the involvement of the associations in the co-design and showcasing potential benefits.
6. Starting a poll session where the participants scan a QR code from the projected screen presentation and provide their answers which show interactively on the screen whenever anyone answers ([Table 2](#))

Question	Total answers	Answers	Count / Percentage
Does your organization have a web page?	27	Yes	81.5%
		No	18.5%
What platform do you use the most for communication with the members of your association?	32	Facebook	12.5%
		Whatsapp	50%
		Email	37.5%
Do you think the members of your organization will be motivated to use Red Cívica Local?	31	Totally sure	6.5%
		We need to motivate them	58.1%



		I don't know	19.4%
		They would prefer the current ways of communication	12.9%
		They won't care	3.2%
Do you think it is important to have presence in other social networks?	32	Yes	100%
		No	0%
Do you think that Red Cívica Local would improve the communication have within their members?	21	Yes	89%
		No	11%
Do you think the Civic Network will help you get more members for your organization?	18	Yes	88.9%
		No	11.1%

Table (2) Poll session results during the participatory workshop

7. After each question, sometimes participants asked follow-up questions and one or more of the city council commented, answered or engaged in discussion with the the participants— which is mainly the objective of the poll session.
8. Further discussion continued and further explanation from the city council and the technical team, mostly about the specific tools of the platform and how they will serve towards the final objectives.
9. Next steps were discussed and participants were informed they will be communicated for asking further involvement by being part of the co-design team to help in usability tests.
10. Participants were greeted and workshop concluded.

Discussions during the workshop were mainly started with the poll sessions and kept going until the end of the workshop. Topics that were discussed were mainly:

- A main issue participants were discussing is the social divide, as many showed concern that some disadvantaged people do not have access to technology nor the internet.
- Also, some participants were concerned about elderly people as they are not capable of using technology therefore if the only way to participate is through this platform would be a problem.
- Importance of discussion forums and they will undoubtedly improve communication if they exist in the platform.
- The importance of supporting tags and filtering was discussed, therefore, citizens will be able to be selective on what topics/organizations/neighbourhoods/activities to follow or receive news or notifications from.
- Whatsapp is the most used communication channel and it has limitations.

**The first source** ([Figure 2](#)) of selection criteria is the technical requirements provided by the city council. For simplicity, a table was created to evaluate the platforms using only these requirements where the columns are the five potential platforms that a choice will be made among them, and the rows are the distinct requirement. Around 5% of the requirements were not taken into consideration for redundancy or unclarity. The table is available at [Annex 3](#) and the overall results from this table are in [Figure 5](#). The chart is showing two columns for each platform, the blue one is for the total number of covered requirements while the red one is for the total number of partially covered requirements. As per the methodology and the choice criteria, the selection will not only be based on this comparison.

In this chart, it can be noticed that the number of covered requirements is almost the same between Commuconnecter and ArcGIS Hub, as mentioned before, ArcGIS Hub will be excluded from the beginning for being proprietary software. The first two candidates in the comparison are Decidim with 47 covered features and Commuconnecter with 41 covered features. Therefore as per this comparison, **Decidim** is the most convenient platform to pursue this study.

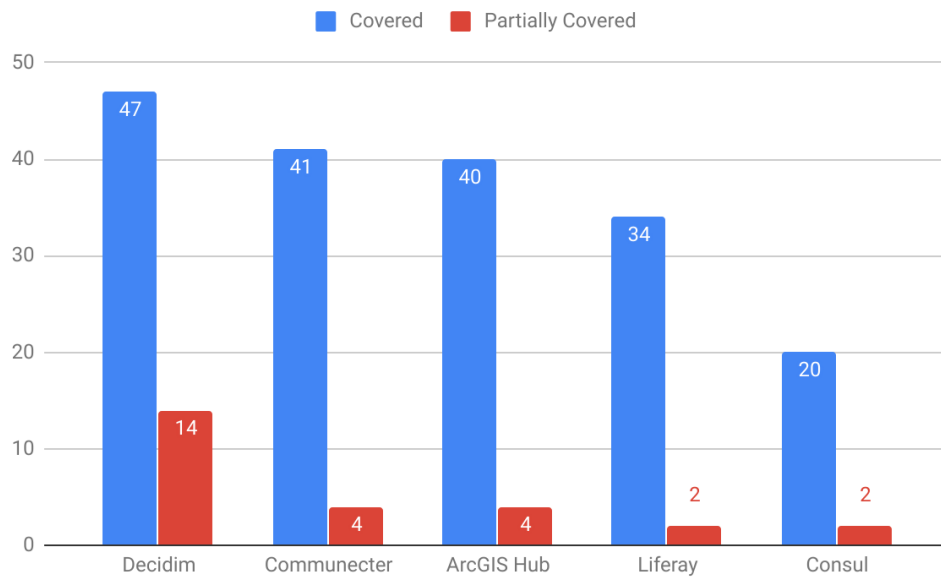


Figure (5) - Comparison among platforms based on technical requirements

**The second source** (Figure 2) of selection criteria of the aimed platform is through the three artefacts earlier in this chapter and contribute to the preliminary result of this study—which is the selection of the platform that is going to be used in realizing the study objectives. The first artefact is the meeting with the city council. It was clear the city council officials put a lot of confidence in the development team to choose the best platform for the development. The city council gave a few guidelines and restrictions like user interface homogeneity, language availability and the open-source nature of the target solution.

In the second and the third artefact, the survey and the participatory workshop with the citizens' associations' members, the objective was to understand what the tools they have at the time are, and how they pursue their activities inside and between associations. Moreover to give them space to give ideas and brainstorm on how they think an efficient civic engagement platform should be like or which functions it should contain. Therefore, there were open-ended questions that are closely related to something at their benefit, like increasing visibility or communication with the city council to encourage answering those questions.

The participants of the survey and the participatory workshop were above all stressing on the inclusiveness of the potential platform, they showed anxiousness from the social divide and the exclusion of the disadvantaged people. They seconded on many features that already part of the technical requirements from the first source (Figure 2), including capability of collaboration among its members and other associations, events, newsletter, projects, news by

each association to advertise for its activities, setting up meetings, common agenda, discussion forums, tags and filtering. They also emphasized the importance of being able to advertise, share and search for associations' activities generally and volunteering opportunities specifically.

Some of the participants in the workshop and the survey were discussing issues that are not feasible to realize simply by using a software platform. These issues included economic support, the presence of supervision in the entities, advertising physically on buildings' facades, physical headquarters for activities, more human resources, and eventually finding a solution for the elderly that cannot use technology and internet.

Eventually, from the second source, it is clear that other than the unfeasible comments by participants, the other comments are supporting the technical requirements from source 1 except for the presence of advertising and search for volunteering opportunities.

This volunteering functionality is only available in Communecter, one of the candidate platforms.

Looking back on the selection criteria depicted in [Figure 2](#), an important aspect in the selection criteria is the **adaptability**. The candidate platforms are developed using different technologies, programming languages and software design. Decidim and Consul are built using Ruby<sup>9</sup>, Liferay is based on Java<sup>10</sup> technology while Communecter is a PHP application.

[Crawford and Hussain \(2017\)](#) in their comparison of four server-side scripting languages including Ruby and PHP, concluded that PHP is still the primary dominating server technology used on the internet. Mainly because it is an old technology, getting started in using the technology is relatively easier than its peers and the popularity of the language makes it easy to get support and help while using it on internet forums and blogs.

The software design of the platform is a very important factor towards adaptability because it can pose huge difficulty and require much work if there is something fundamental at the application design that needs to be changed.

The main entity in the design of Decidim and Consul is the process while in Communecter platform, it is designed to be a civic social platform having the citizen as the main entity in the platform structure.

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<sup>9</sup> Ruby. (n.d.). Retrieved February 1, 2019, from <https://www.ruby-lang.org/en/>

<sup>10</sup> Oracle. (2018, May 01). Java. Retrieved February 1, 2019, from <https://www.java.com/>

The system architecture of Consul and Decidim is based on a Postgres<sup>11</sup> relational database while Communecter is based on non-relational no-SQL<sup>12</sup> Mongo database. Non-relational databases were mainly designed because the difficulties in scaling the relational databases for that, non-relational databases like Mongo are more flexible and easier to scale and make use of available nodes as they are basically designed to use cheap commodity clusters of servers (Sareen and Kumar, 2015).

To make a decision on the platform that will be used to for this study based on adaptability, it is worth mentioning that the top two platforms, Decidim and Communecter are created in a modular dynamic way using recommended software design patterns that ease software maintainability and reliability. However based on the aforementioned points, Communecter weighs out Decidim in the adaptability. Programming language popularity and outreach, system architecture that is citizen oriented and database design flexibility make Communecter a better platform to maintain, scale, and modify. **Communecter is the platform that will be used further in the study.**

---

<sup>11</sup> PostgreSQL. (n.d.). Retrieved February 2, 2019, from <https://www.postgresql.org/>

<sup>12</sup> Wikipedia contributors. (2019, February 20). NoSQL. Retrieved February 21, 2019, from <https://en.wikipedia.org/wiki/NoSQL>

## 5. Development and Implementation

In this section, it will be explained how the civic engagement platform Communecter has been developed and implemented.

### 5.1. System Architecture

Communecter is an open-source platform developed by Pixelhumain<sup>13</sup> and is available on Github for anyone to use or reuse. The software license that Communecter is Apache License 2.0<sup>14</sup> which is a permissive open-source license for which a copy of the license should be provided with the edited copy of the software along with modifications notices for each file modified from the original version.

Communecter is basically a PHP<sup>15</sup> application built with the MVC (Wikipedia contributors, “Model–view–controller”, 2019) programming paradigm and for that Pixelhumain they used a PHP framework called Yii<sup>16</sup>, for a better insight into the architecture of Communecter look at [Figure 6](#).

---

<sup>13</sup> Pixel Humain. (n.d.). Retrieved January 28, 2019, from <https://github.com/pixelhumain>

<sup>14</sup> Apache. (n.d.). Retrieved January 28, 2019, from <https://www.apache.org/licenses/LICENSE-2.0>

<sup>15</sup> PHP. (n.d.). Retrieved January 28, 2019, from <http://www.php.net/>

<sup>16</sup> Yii Framework. (n.d.). Retrieved January 28, 2019, from <https://www.yiiframework.com/>

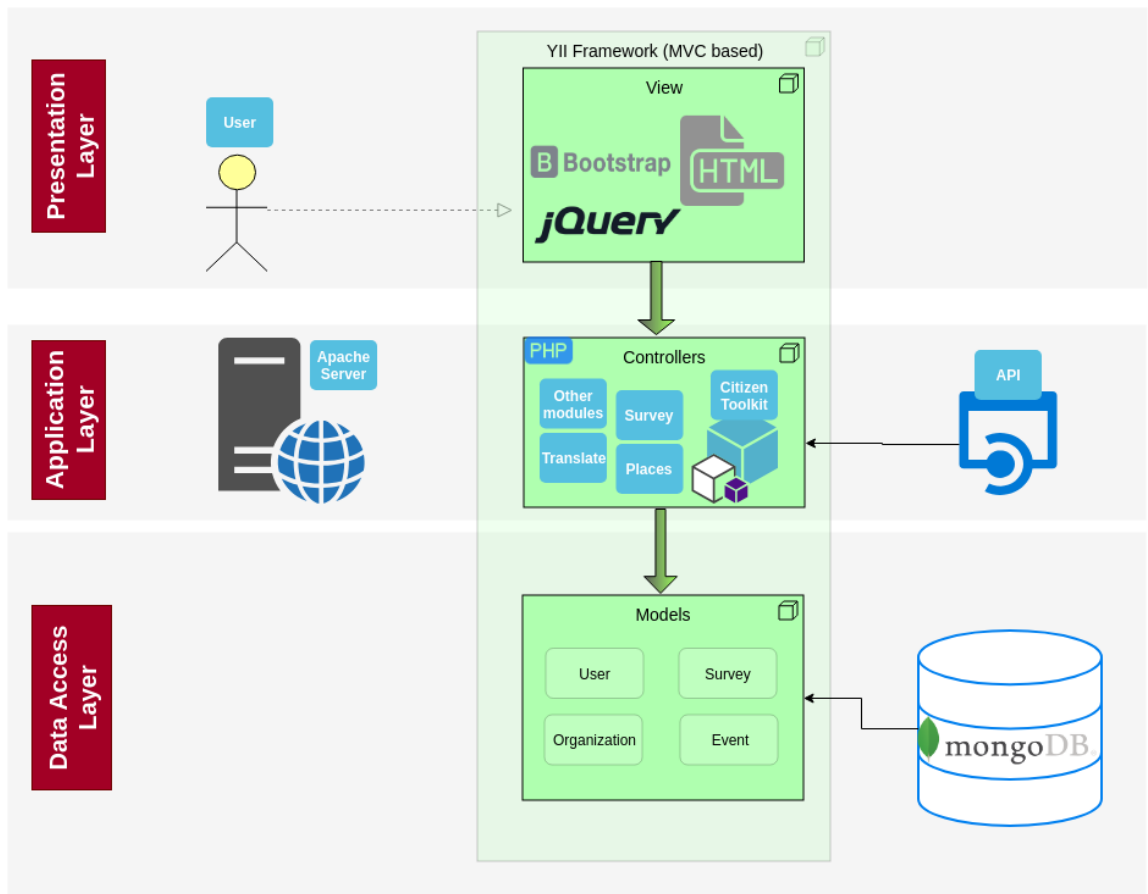


Figure (6) - Commuconnector System Architecture

At the data access layer of the platform, the platform data is stored in a NoSQL<sup>17</sup> Mongo<sup>18</sup> database.

On the application layer level, the application lives on an apache server which executes the application PHP code and serves the HTTP requests coming from the client application.

The platform is created in a modular and dynamic way following separation of concerns design principle, therefore, there are controllers for each system entity.

The presentation layer is HTML based using a bunch of Javascript libraries including JQuery<sup>19</sup>, and Bootstrap<sup>20</sup> for UI design.

<sup>17</sup> Wikipedia contributors. (2019, January 23). NoSQL. Retrieved January 28, 2019, from <https://en.wikipedia.org/wiki/NoSQL>

<sup>18</sup> Open Source Document Database. (n.d.). Retrieved January 28, 2019, from <https://www.mongodb.com/>

<sup>19</sup> JS Foundation. (n.d.). JQuery. Retrieved January 28, 2019, from <https://jquery.com/>

<sup>20</sup> Otto, M., & Thornton, J. (n.d.). Bootstrap. Retrieved January 28, 2019, from <https://getbootstrap.com/>

As seen in [Figure 6](#) the Yii framework is spanning the layers as it is based on modules<sup>21</sup> which are similar in principle with microservices<sup>22</sup>. Each module of them is based on MVC, therefore, each module has a model, view and a controller so that a new module can be developed separately and injected through configuration files which makes modifying this platform modular and easy in theory.

Moreover, the platform is providing APIs that exposes some of its data and functions in REST format for third-party applications to be able to integrate with it and make use of what it is offering.

## 5.2. Deploying the platform

Communecter platform is an open source software available on GitHub ([Pixelhumain, "Pixelhumain/communecter", 2017](#)), therefore, the first step was to fork the project to be able to contribute to the project whenever possible. One main inevitable contribution will be the translation as it will be definitely translated into Spanish and maybe to Valencian to be able to share it with the local people.

It was found also that the project is available to deploy with Docker— a container platform<sup>23</sup>. Docker is an infrastructure agnostic platform which encapsulates the application and its environment together in a container that easy and portable.

For future work on this project, Docker was used so contributors later can start off where we stopped without problems.

Communecter docker project is available on Github, and by asking Communecter team they advised not to use it as it is not final nor stable, however, starting from there it was possible to fix the problem in this Docker project.

After troubleshooting the current docker project ([Pixelhumain, "pixelhumain/docker", n.d.](#)), it was found that the problem is the mongodb version is wrongly configured. Changing the database configuration file inside the application files with the correct version fixed the problem locally in the deployment for this project.

---

<sup>21</sup> Fundamentals: Module. (n.d.). Retrieved January 28, 2019, from <https://www.yiiframework.com/doc/guide/1.1/en/basics.module>

<sup>22</sup> Wikipedia contributors. (2019, January 19). Microservices. Retrieved January 28, 2019, from <https://en.wikipedia.org/wiki/Microservices>

<sup>23</sup> Docker, Inc. (n.d.). Docker. Retrieved January 28, 2019, from <https://www.docker.com/>



For future use and as a contribution to the project, a pull request with this fix was created on the public repository<sup>24</sup>.

The deployment of Commuconnector platform is based on an environment composed of two Docker containers. The first one is "mongo" container which has the database server deployed and serving the requests coming from the second container, "front", which has the Apache server installed and the front-end application hosted. Please check the Docker Compose<sup>25</sup> file in [Figure 7](#) for better understanding the deployment architecture (Ports configuration is hidden for security).

The docker compose file has two containers, the first one named "mongo" as depicted in [Figure 7](#) is basically the Mongo database server. It is an image from the docker image mongo version 3.4 and it is reading and writing its data from the volume shown in the file right below the image line. The volumes in Docker<sup>26</sup> are a very useful way of data persistence independent from the Docker container so they can be kept on the file system next to the container and are not affected whenever anything changes within the container. They are also used in the second container "front" for the code files, log files and database files.

The container "front" is a build from the Docker file docker-front shown in [Figure 8](#) (will be briefly explained later). The docker compose file also has the used inbound/outbound ports configuration as shown in the ports configuration in line 11. Depends\_on statement on line 19 for Docker engine to load mongo container first as it is a dependency for front container to work properly.

---

<sup>24</sup> Pixelhumain. (n.d.). Fix mongo version by alaacs · Pull Request #7 · pixelhumain/docker. Retrieved January 28, 2019, from <https://github.com/pixelhumain/docker/pull/7>

<sup>25</sup> Docker, Inc. (2019, January 24). Overview of Docker Compose. Retrieved January 28, 2019, from <https://docs.docker.com/compose/overview/>

<sup>26</sup> Docker, Inc. (2019, January 24). Use volumes. Retrieved January 28, 2019, from <https://docs.docker.com/storage/volumes/>

```

1 version: '2'
2 services:
3   1 mongo:
4     image: mongo:3.4
5     volumes:
6       - ./code/data/db:/data/db
7     ports:
8       - " : "
9   2 front:
10    build: docker-front
11    ports:
12      - " ):80"
13      - " }:"
14      - " |:"
15    volumes:
16      - ./code:/code
17      - ./code/data/db:/data/db
18      - ./code/log:/var/log/nginx
19    depends_on:
20      - mongo

```

Figure (7) - Application's main Docker Compose file

As shown in [Figure 7](#) line 10 that the second container in the main Docker Compose file it is a build from the image docker-front which is depicted in [Figure 7](#). In brief, this is a Docker image initialized from the PHP 5.6.31 version image and then the rest are the commands used to set up the application, including copying and modifying the configuration files inside the container using the ones that are next to the Docker file (COPY and sed commands).

Setting up the Docker environment this way, it will be created two containers, one is the database server and the other one is the application server. Running the following Linux bash command, the Docker engine will start these two containers in the memory of server.

```
docker-compose -f docker-compose.yml up -d
```

The command parameter `-f` is for specifying the file name (docker-compose.yml) and `-d` is for the detached mode so the containers run in the background.

And with that the docker containers are running in the server's memory and can be accessed through the local server using the port that corresponds to port 80 (HTTP standard port). So that if the port in line 12 in the application main docker compose file ([Figure 7](#)) is 9999, the application can be accessed through `http://127.0.0.1:9999` where 127.0.0.1 is the loopback standard IP for the localhost or the local computer/server. And with that, the deployment of the platform is concluded.

```

1 FROM php:5.6.31-fpm
2
3 ENV MONGO_URL ${MONGO_URL}
4 ONBUILD ENV MONGO_URL ${MONGO_URL}
5 ENV MONGO_DB ${MONGO_DB}
6 ONBUILD ENV MONGO_URL ${MONGO_DB}
7
8 # Install packages
9 RUN apt-get update && apt-get install -my \
10     nginx \
11     curl \
12     supervisor \
13     wget \
14     php5-curl \
15     php5-fpm \
16     php5-gd \
17     php5-memcached \
18     php5-mysql \
19     php5-mcrypt \
20     php5-sqlite \
21     php5-xdebug \
22     php5-mongo \
23     php-apc
24
25 # Remove default nginx configs.
26 RUN rm -f /etc/nginx/conf.d/*
27
28 # * Ensure that PHP5 FPM is run as root.
29 # * Pass all docker environment
30 # * Get access to FPM-ping page /ping
31 # * Get access to FPM_Status page /status
32 # * Prevent PHP Warning: 'xdebug' already loaded.
33 # * XDebug loaded with the core
34 RUN sed -i "s/user = www-data/user = root/" /etc/php5/fpm/pool.d/www.conf && \
35     sed -i "s/group = www-data/group = root/" /etc/php5/fpm/pool.d/www.conf && \
36     sed -i '/^;clear_env = no/s/^;/' /etc/php5/fpm/pool.d/www.conf && \
37     sed -i '/^;ping\.path/s/^;/' /etc/php5/fpm/pool.d/www.conf && \
38     sed -i '/^;pm\.status_path/s/^;/' /etc/php5/fpm/pool.d/www.conf && \
39     sed -i '/.*xdebug.so$/s/^;/' /etc/php5/mods-available/xdebug.ini
40
41 # Add configuration files
42 COPY front-conf/nginx.conf /etc/nginx/
43 COPY front-conf/supervisord.conf /etc/supervisor/conf.d/
44 COPY front-conf/php.ini /etc/php5/fpm/conf.d/40-custom.ini
45 COPY front-conf/communecter.conf /etc/nginx/conf.d/
46
47 EXPOSE 80 443 9001
48
49 ENTRYPOINT ["/usr/bin/supervisord"]

```

Figure (8) - docker-front Docker file

## 5.3. Platform Adaptation

In order for the selected platform (Communecter) to be functional in the use case presented (Red Cívica Local) it should have minimum functions matching with the nature of the use case.

Here in this section, it will be explained the adaptation or modifications that were necessary to fit the use case and make it possible to validate it within the local context of Valencia.

### 5.3.1. Localization (language)

First of all as known from [Chapter 4](#), the platform is targeting users from Valencia, Spain and to make sure this platform will get the reach it should have, it was inevitable to translate the platform to either or both of the two official languages of Valencia (Spanish and Valencian). It is mentioned in the official requirements of the use case from the City Council of Valencia that eventually it is required the platform to be available in the two languages. However, for our prototype, the platform will be available in Spanish.

Communecter project is developed by PixelHumain which is located in Réunion, an island next to Madagascar in the Indian ocean, and it is an overseas department and region of France, therefore the main platform creators are French speakers and for that the basic language of the platform is French. However, the platform is also available in English, Italian, and German. My supervisors on this thesis (Fernando Benitez and Andrés Muñoz) from Colombia (Spanish natives) they are taking over the translation to Spanish and that would be a contribution to Communecter project and for that, a Github fork repository<sup>27</sup> has been created and used to incrementally translate the platform into Spanish.

Thanks to the modular architecture of the platform, the localization files are independent and separated from the other code file and they are the part of the code where the translations take place. Apart from these files, there are minor places where some localizable text is hardcoded in the files and due to the tight time, they will be translated in place.

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<sup>27</sup> Mfbenitezp. (2018, December 11). Mfbenitezp/pixelhumain. Retrieved January 28, 2019, from <https://github.com/mfbenitezp/pixelhumain>

### 5.3.2. Localization (geographically)

The second part of platform adaptation is the geographic adaptation. Commuconnecter project is meant to be a world-wide citizen participatory platform and it is actually available now globally at the time of writing this text (Pixelhumain, “Réseau sociétal citoyen”, n.d.) where anyone around the world is capable of connecting to their locality and to the organizations, projects, or any activity around. For our use case, the platform will be rather used locally in Valencia and that required modifying the system functions to be only available around Valencia, Spain. That required modifying the underlying code to only allow system users to pursue their activity only in Valencia by restricting the extent to the Valencian Community<sup>28</sup>.

For doing so it was needed the borders of Valencia Community area so that the input locations from the platform user can be restricted correctly and also a bounding box of this polygon was needed to set up the map extent which the user can see, pan, and zoom around it.

Valencian Community polygon was retrieved from OpenStreetMap<sup>29</sup> and then, using an online conversion tool<sup>30</sup> that takes as an input OSM relation ID and returns the polygon corresponding to this ID, it was downloaded the polygon as GeoJSON<sup>31</sup> object.

The GeoJSON object output from the latter tool is wrapped in a GeometryCollection type, which apparently does not work with QGIS, as it does not display it at all, however, it was not found any documentation that QGIS requires the GeoJSON to be in a certain format. Anyway for getting around this problem, the structure of the GeoJSON had to be changed to work in QGIS but without changing the geometry itself([Figure 9](#)).

The GeoJSON object later was used in QGIS Desktop software with a basemap to be able to create the bounding box of it, as shown in [Figure 10](#).

---

<sup>28</sup> Wikipedia contributors. (2019, January 18). Valencian Community. Retrieved January 28, 2019, from [https://en.wikipedia.org/wiki/Valencian\\_Community](https://en.wikipedia.org/wiki/Valencian_Community)

<sup>29</sup> OpenStreetMap. (n.d.). Relation: Valencian Community (349043). Retrieved January 28, 2019, from <https://www.openstreetmap.org/relation/349043>

<sup>30</sup> Polygon creation. (n.d.). Retrieved January 28, 2019, from <http://polygons.openstreetmap.fr/>

<sup>31</sup> Wikipedia contributors. (2019, January 15). GeoJSON. Retrieved January 28, 2019, from <https://en.wikipedia.org/wiki/GeoJSON>

```

{
  type: "GeometryCollection",
  - geometries: [
    - {
      type: "MultiPolygon",
      - coordinates: [
        + [...],
        + [...],
        + [...],
      ]
    }
  ]
}

```

Before

```

{
  type: "FeatureCollection",
  - features: [
    - {
      type: "Feature",
      - geometry: {
        type: "MultiPolygon",
        - coordinates: [
          + [...],
          + [...],
          + [...],
        ]
      }
    }
  ]
}

```

After

Figure (9) - GeoJSON before and after fixing for QGIS

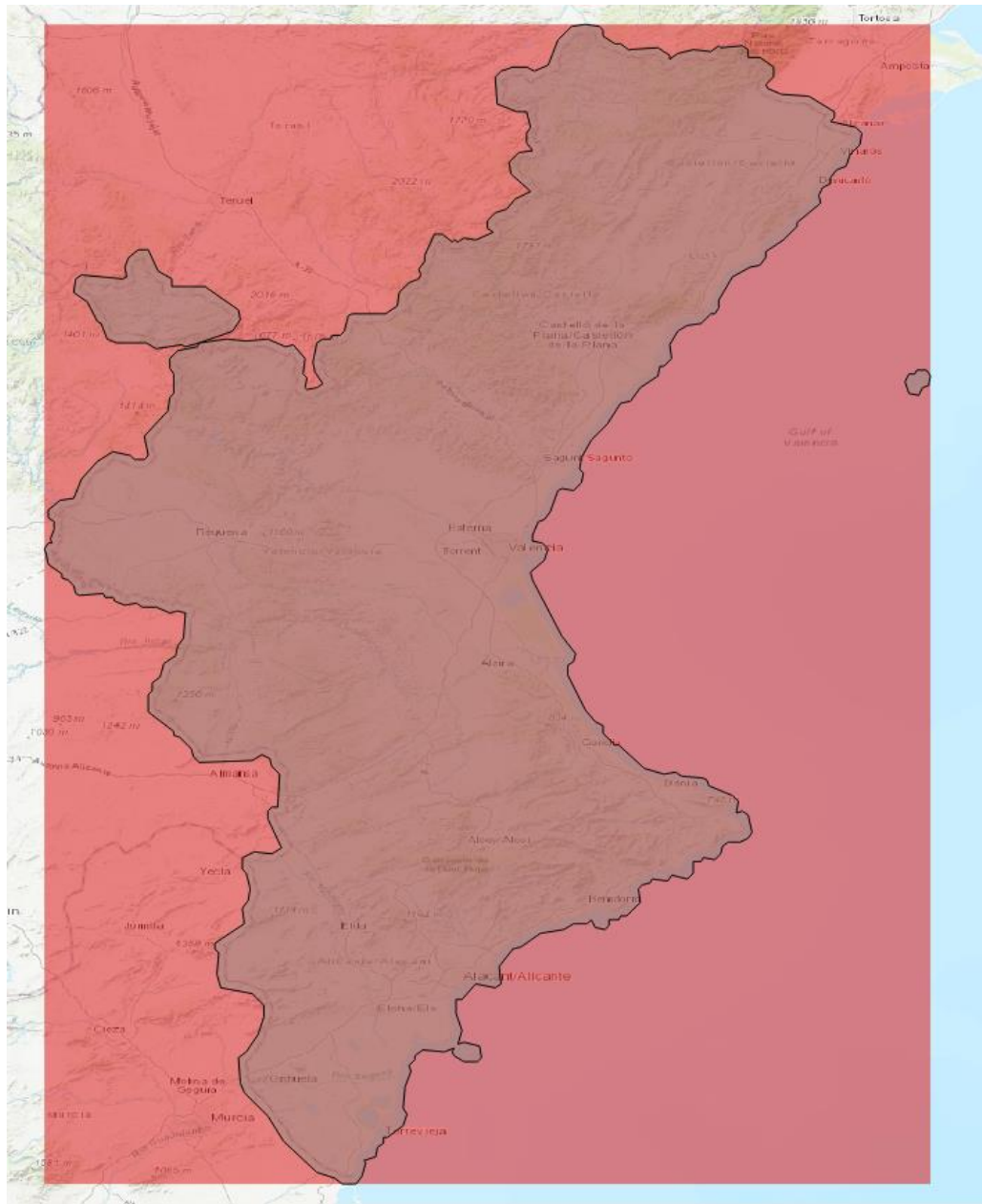


Figure (10) Valencian Community Polygon and its bounding box

Based on the methodology after development the implementation was made sure intact by testing the various elements that were mentioned in Stage 4 in the methodology [Section 3.4](#) and because of that many software errors were found and fixed accordingly.

## 6. Validation

The workshop took around five minutes over the two planned hours and the feedback about the workshop experience was positive.

The main part of the workshop is number 4 in the workshop program (mentioned in the [methods](#)). For this point the participants were motivated to impersonate some association, NGO, community group or simply a citizen that wants to join any of the available entities that exist in the platform (there were two entities created on the platform before the workshop started). The participants were encouraged to take notes, they were given ideas about the sort of entities and they were also encouraged to work together if they wanted to (like two persons working for the same entity as different roles or to join or follow each others' entities).

All the participants were using their laptops to do the tests except for two participants who did not have laptops so they were using their phones to complete the tests and to answer the surveys. The laptop users did not have any blocking issues to complete the tasks they planned while the mobile phone users faced a blocking issue that hindered them from adding photos to the events and projects and therefore they had to pursue the test without adding the photos.

The overall experience the participants had during the validation is summarised in [Figure 11](#). It was part of the survey questions. Two participants did not seem to like the experience and they rated it as 3 out of 10 while five of the participants rated the experience 7 and 8 out of 10; three participants found the experience as great as 10 out of 10. These scores give the platform overall experience an average score of **7.2 out of 10**. One of the two participants that rated the experience 3/10 was dissatisfied with the events feature while thinking that using the feature was neither difficult nor easy. The participant suggested the events should be featured on the user homepage and they should appear on the map whenever the user is registered or interested in an event. This participant also suggested that there should be a verification process for the creators of organizations and that subscription to an organization button should be more prominent.

The other 3/10 rater did not write exactly why he/she was not very satisfied with the platform but apparently, he/she is one of the mobile phone testers as he/she mentioned the



upload photo from phone issue. He/she also indicated that the survey tool should give more options and be more flexible in the type of questions.

### How good was your experience with the platform?

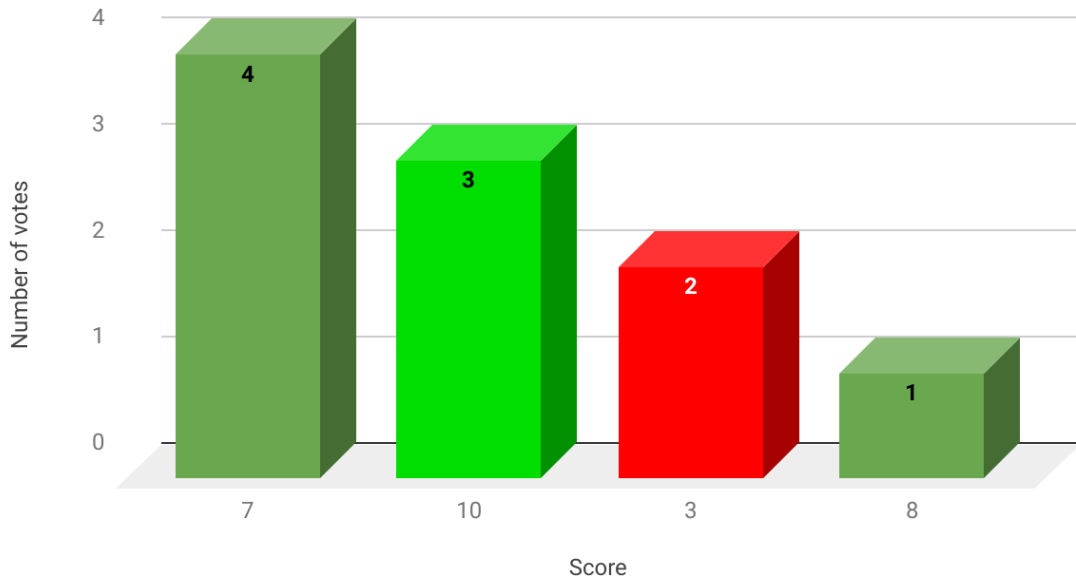


Figure (11) - Validation Workshop | Overall evaluation of the platform experience

The participants were asked in the survey a question about how important they think the distinct features of the platform are ([Figure 12](#)). Nine participants considered that events and social networking are useful, half of them think they are extremely useful. Eight participants found projects are useful, three of them consider projects are extremely useful. On the other hand, just six participants think surveys and maps are useful. None of the participants reported any of the platform features as useless.

## Importance of the features

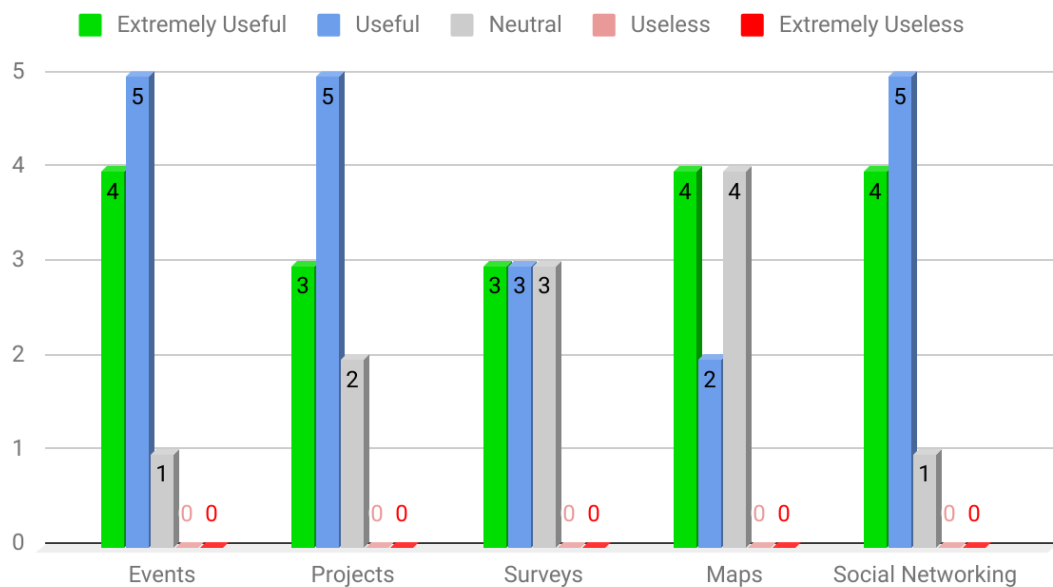


Figure (12) - Validation Workshop | Users responses to the importance of distinct features

Participants were asked about easiness and their satisfaction with the platform features and they generally did not provide any negative feedback, they were either satisfied or neutral, they found using the features either easy or normal.

Participants were given space to write down their suggestions per feature and generally on the whole platform experience. Moreover, there was a discussion/reflection session following the survey filling session. Based on the discussion and the participants' suggestions consolidated there are the following points:

- Generally, the mobile version of the platform is not ready to be used and needs more testing.
- The map element is appreciated by the participants and they think it is very important to build community. However, access to the map should be easier and more straightforward. Moreover, filtering and sorting the map were not intuitive enough to use and it was suggested that the platform user should be able to measure the distance between points of interests and current or events' locations.

- During the discussion, there was a debate on why anyone should be using this platform instead of other social media. One participant stated that the map feature is a good motivation for her to use this platform instead of other social media.
- Events feature was appreciated as well but participants are expecting improvements like adding registration deadline, giving more flexibility in the event types, allowing event creators to extend the events to more than one day and making the events more visible to each user of the platform.
- The open edition feature that is actually making the features of the platform available for collaboration by anyone (the same way Wikipedia works) was confusing for participants.
- Participants suggested there should be an efficient reputation system for the people and associations so platforms user can know how other users think of entities on the platform.
- Participants think there should be a mechanism for validating registrations to make sure people are not using fake personal data and to avoid scams.
- Although participants found that the platform good and they are basically satisfied, they think the platform requires improvements in UI and usability in general.
- Allow platform users to sign up for hashtags therefore whenever something of interest to a certain user, the user receives a notification.
- Next door application ([Nextdoor, 2019](#)) in the US also is a good civic platform to look for the people around you (useful to find someone that can walk your dog, look for the courier package that might have arrived at the wrong door, or ask about the Xmas decoration that got stolen from your garden). To make this application also as useful as next door, it should make it possible for users to look for stuff around them using vicinity or in a certain neighbourhood or a radius of search circle.

The participants of the validation workshop created 23 items on the platform that are composed of 7 organizations, 7 projects, 4 events, 2 resources, 2 surveys and 1 volunteering publication. The participants created their activities on the platform supporting many causes among them refugees welcoming, agricultural activities, environmental awareness, marine life, peace action, peace education and lastly music. The projects and events were supporting the causes of the organizations created, however, some projects and events were created by individuals to discuss humanitarian field and earth regeneration. One participant offered to

volunteer by creating a post for their services. Two surveys were created for asking about opinions related to embracing the socially excluded and discussing internship opportunities in the humanitarian field. Figures 13 and 14 show part of the items created.

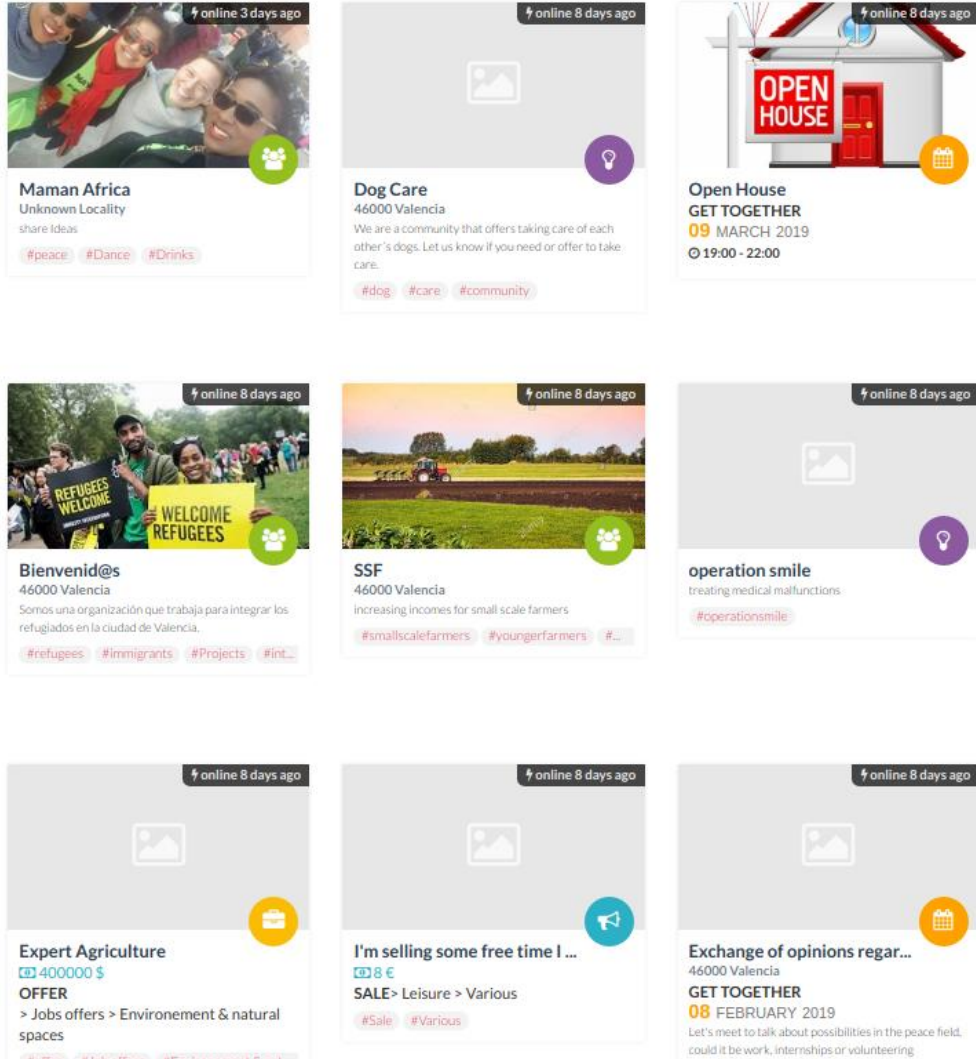


Figure (13) - Items created during the validation

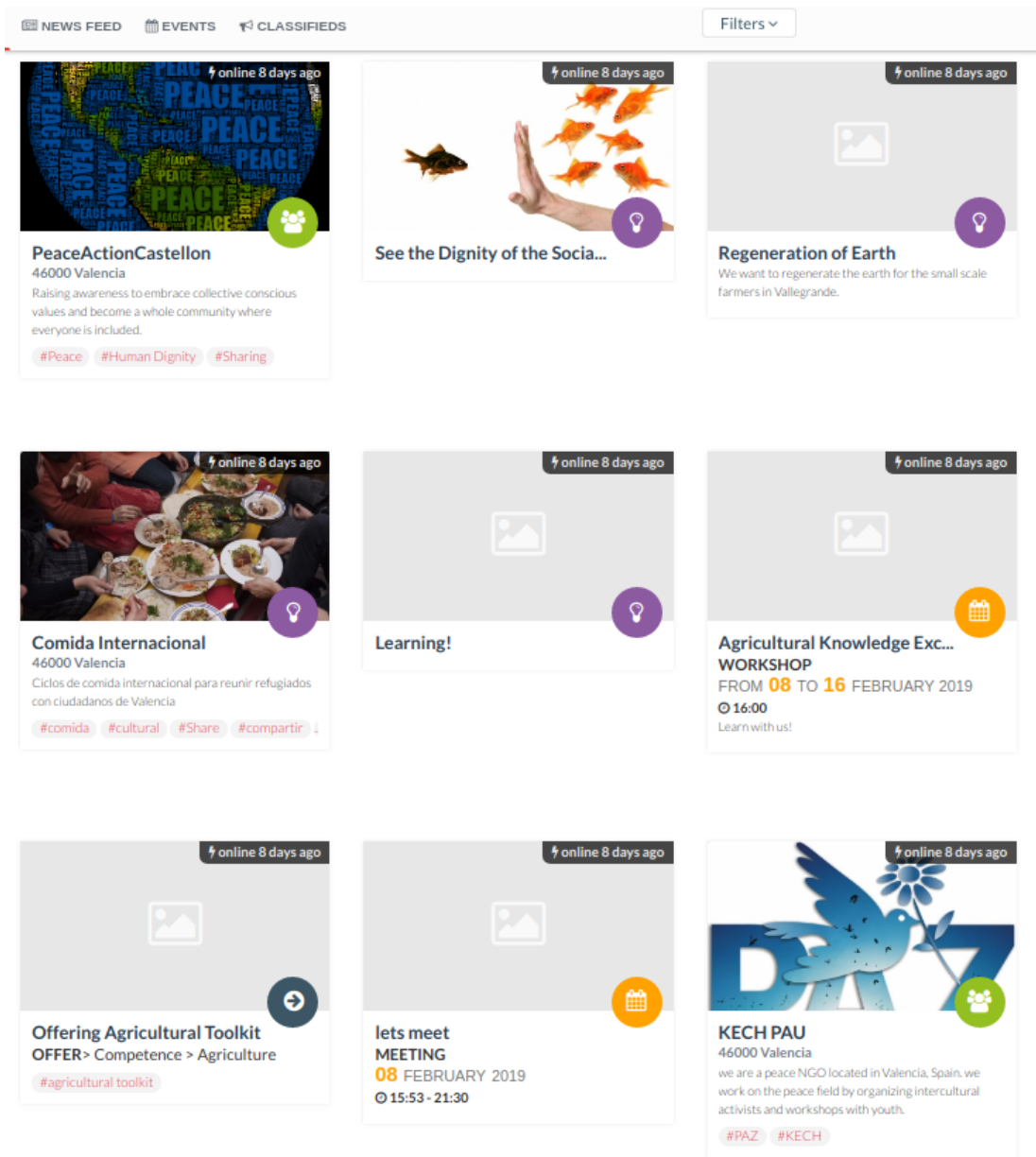


Figure (14) - Items created during the validation 2

The validation workshop results in positive feedback from the participants that is accompanied with a lot of constructive ideas and opinions. Despite warning the participants that the platform is still an alpha version, errors and non-intuitive function usage were still a frustration. With this chapter, the thesis study is completed, leading to the discussion chapter where the results of the workshop among other points are analysed and argued.

## 7. Discussion

In this study, the three essential parts are, first the process of selecting an open-source platform that can serve as the starting point of creating a civic engagement platform. Secondly was the development of a prototype platform using mostly the available functionalities at the core platform with some updates to adapt the use case in this project which is Red Cívica Local project. The final part was the validation in which students of the Peace Master at UJI tested the platform and criticized it based on their experience in working with third sector organizations.

In this chapter it will be discussed the results through which the selection process of the platform was executed and the requirements provided by the city council of Valencia. Further discussion will be on the ideas and opinions of the citizens' associations' members in the first survey and participatory workshop and additionally on the evaluation of the Peace Master students in the validation phase.

### Inclusivity and Social & Age Divide

The very first concern and also the most discussed throughout the project is the inclusivity. Participants from the citizens' associations showed notable anxiety about the platform being inclusive to everyone eventually. As per the results, some of the participants are parts of associations working with elderly people, some others are working with refugees and some with drug addicts or homeless people.

Unfortunately, there are no age data about that, but it was clear from seeing the participants at the first participatory workshop that the average age was somehow high or at least there were just a few participants below thirty years old and the majority of them were most likely between 50 and 70+ years old. The participants voiced concerns about age inclusivity especially the ones working with the associations helping the elderly and hospitalized people.

Many sections of the citizens are completely in isolation of technology, so how civic engagement solutions can be able to accommodate all communities of people? In this regard and in a attempt to include everyone in the platform, the platform created in this study is designed to be available for everyone. Anyone can create a user and join or follow any organizations or entities on the platform, so they will be notified by its news and updated by its

activities. The platform is also allowing the creation of new entities through a click of a button and the capability of inviting people whenever needed.

Other forms of inclusion in the system can be supported by some other functions like events, surveys and projects for which any number of users are welcome to join or follow these entities' activities. Anyone that has a user on the platform can create entities, events, projects or surveys which makes it easier to support certain communities. And anyone can just create a user on the platform through a simple registration form.

On the contrary the platform is completely in a digital form, therefore, people who do not have access to technology, internet nor electronic devices and people who do not have computer or cell phone literacy will inevitably be excluded from the civic engagement process.

However, these people can be supported via different means that are connecting them eventually to the digital platform. As an example by providing training or coaching, devices with internet connection available for use publicly for free or providing a call centre where people can call an agent via telephone to support them with being their technical assistance and do activities on the platform on their behalf.

These are just examples but it is very important that civic engagement solutions nowadays take into consideration all these cases for actual inclusivity and that the solutions for these cases are not only digital or technological.

## Platform Functions

Participants at the survey and the initial workshop expressed their interest in a civic engagement platform that can assist them at gaining visibility and popularity by allowing them to advertise for their activities and showcase their entities' objectives.

The developed platform is completely supportive of these functions as there are many ways to advertise for activities using news, newsletter, projects, resources, events etc. And consequently, users who are following these entities can receive such updates and news.

On more function the participants think it is necessary is the possibility of posting volunteering opportunities on the platform since most of the entities are NGOs and third sector organizations sometimes with limited funding, they sometimes are in need for volunteers or charity. And surely there should be also space for volunteers to either offer their services or

look for potential volunteering opportunities. The developed platform has a feature called “Add a resource” in which the user can offer/ask for anything including service, competence or material which can be used for the volunteering opportunities, however, the tool is pretty general and can be confusing for the user.

Moreover, during the validation workshop, the participants agreed that a good civic engagement platform tends to be capable of making it easy to build community. A citizen can just participate in an activity just because it is two blocks away from his home. That can be possible by means of enabling platform users to connect with their neighbourhoods and potentially reach out to who lives in the vicinity for collective activities, charity, volunteering and possibly even looking for the lost objects or the wrongly delivered courier packages.

That leads us towards the importance of the location importance, that can be a great advantage and at the same time necessitates extra security and privacy measures. Validation workshop participants showed great enthusiasm for the map component in the platform, they believe it can get the civic engagement platform a great edge over the other social media platforms. On one map they can check out their points of interests, signed up events and potential interesting activities altogether and they can browse and reveal higher or lower level of details about what might be of their interest. At the same time, the workshop participants were anxious about location privacy which should be a clear setting for each user whenever they are about to expose their location, a clear consent should be presented to them. This concern is not very significant in the platform as the exact location of the user is not saved or used at all, however, proper testing and quality control measures should be exercised on the platform before it is released to the public.

## Improving decision making

The introduced platform is a huge effort, it has a lot of many useful tools and functions for both the citizens and the local government. The local government is changing a lot of its internal policies and revamping its strategies and workflows for this initiative to work out for the ultimate objective of improving the decision-making by engaging the public.

Through the platform, local administration will be able to delegate some of their regular procedures to citizens. Procedures regarding identifying citizens problems, discussing or discourse, and approving them and put in practice are becoming also a possibility for citizens



to initiate or easily engage in. Through the platform, citizens can report their problems, collectively decide if these are the most significant problems they have by the capability of discussing or voting pro/against and organizing events to meet if necessary. This would benefit the decision making by shortening the whole process and making it smoother and more effective because the people who are having the problem are the same people who are reporting and discussing the problem and possibly provide proposed solutions.

When people are engaged they will feel more free to participate and voice their concerns and give suggestions because they feel that they are a principal part of this process. That was seen in the validation workshop, participants when asked to use the platform to create initiatives and arrange meeting, they could create 7 organizations, 7 projects, 4 events and more items in just 30 minutes. They also stated the easiness of the platform and that they got acquainted to it quickly.

On top of that, municipal administration can have a direct contact with people who are having the same exact problems or proposals eliminating misunderstanding and removing the gap between citizens and the administration through the platform and they can be present on the ground and see citizens problems from citizens' perspective.

## Development of a Platform

It was worth thinking about why not start a platform from scratch and design it as perfect as it can be from the beginning, and build exactly the very same functions or tools that are needed. In this research study, it was important to start off from something already there, something successful, something tested and something that works. The nature of the project that it is supported by the use case of Red Cívica Local was useful to see what the raw requirement specifications of a platform like this will be.

The requirements list ([Annex 3](#)) is ambitious and a platform like this can take years and huge effort and team to be built from scratch, therefore, the choice of starting with some platform and build on top of it was not a difficult one.

Another choice is between the proprietary software and the open-source alternative, easy choice, should be an expensive proprietary software solution that comes with unlimited support and warranties, with more functions than it can be dreamed of. In the use case, the city council with all the people's tax money can just buy an expensive proprietary software, but caution should be exercised here for many reasons. As per the study of (Simon, 2005) it was found that the use of proprietary software within government environments can be really risky and pose many problems. Among these problems is vendor lock-in that might lead to severe financial risks and interoperability issues among departments within the governmental entity and other governmental entities.

Open source software developers are usually passionate about what they are doing and they work in a collaborative competitive environment that encourages creativity, innovation and experimenting new technologies and methodologies therefore unlike the proprietary software, open-source software can be more reliable and innovative. On the contrary the proprietary software design developed by commercial companies is derived by integration (Simon, 2005) as their objective is to build a software that can seamlessly integrate with some other software they previously built. As a result they form software suites and bundles that are compatible together and therefore the client which is the government in our use case is obliged to stick to the current "easy" but "very expensive" and "not-very-flexible" solutions.

Working with an open-source software is not the panacea that will make everything perfect. Open-source software comes with a tax also, during this study, developing the platform using an open-source software was not an easy task. Despite the good programming experience, it can be troublesome to decipher a platform code that was built in a collaborative effort probably for some few years, in our case, Communecter first commit message on their Github repository was at June 2013. Moreover, the developers' favourite activity is definitely not writing documentation especially when they are not obliged to do it which is the case with open-source software as most of the development activity is done by the community. Lack of documentation can make things very difficult and sometimes impossible. While using Communecter there were some problems with understanding the configurations and the code. A lot of effort, reverse engineering and in some cases Communecter developers could be contacted and they answered a fraction of the inquiries that were necessary to find solutions for getting the platform implementation intact.

## Usability

Participants during the validation workshop had a fairly good experience with using the platform. However, they faced some problems on top of them are the errors. Errors generally in using software can be very frustrating for users and can in extreme cases be a reason for not using the software at all. The software development life cycle has testing as a principal component. The chosen platform was updated and adapted by changing the codebase, therefore, proper testing is essential. For the sake of the study and due to tight time reasons, the developed platform was not tested enough but that would not be the case when this platform will be deployed in a real environment.

Participants did not only face errors but also they had inconvenience finding tools like the map tool. Moreover, some functions were not very clear to them how it works because the way they work was not intuitive enough for them to figure out.

Usability can be very important getting people encouraged to use such a platform. Participants during the validation workshop suggested ideas related to personalised content such as the ability to specify their interests and needs from the platform and get content and notifications based on that. They suggested following hashtags, therefore the platform will personalise their newsfeed or send them alerts whenever new content is available. By doing this it is assured interested people, as well as people in need, will not miss a chance of newly created opportunities that can be for example related volunteering offered or in need.

The platform usability on smartphone devices faced blocking issues which would be also a blocking issue to reach the highest maturity level of Open Government services (Lee and Kwak, 2012).

## 8. Conclusions

This work shows that not all the current civic engagement platforms possess good potential and a careful selection should be exercised before selecting one of the abundant software solutions available today. Especially because they are targeted to get utilized in such a sensitive environment of government, citizens' associations and citizens where many factors must be tackled sufficiently and accurately. Selecting the most convenient platform for improving the decision-making process alone can be useless because while the civic engagement concept is the same, every use case can require a different approach and impose different challenges.

That is why in the use case of Valencia's Red Cívica Local, official requirements were a primary source of, first, selection criteria to choose among the available civic engagement platforms, and secondly as guidelines to follow while implementing the platform to fit the use case. Participation is a key objective and at the same time is a key mechanism to go after. This work was started by a participatory workshop and was concluded by a participatory workshop to engage citizens in the design of their civic engagement platform.

Transparency is unavoidable and that is why, above all, open-source software was a key non-functional requirement as this solution is for the community and the community will at the end give its say and even decide on changing it if it is for the general good. Having a list of fixed technical requirements that is written by just one party, however, does not promote much about participation. Although the citizens were involved in the process thereafter, it could have been more coherent with the idea of participation from the beginning to the end if citizens and citizens' association were invited to or consulted for authoring this list of technical requirements.

Inclusivity is an issue that is more complicated to be resolved by just a technological software solution. We are humans and if some of us chose not to cope with this technological advancement or simply can not cope with it, there should be an effective solution to avoid the exclusion of these people. The development of such initiative that is fundamentally aiming at civic engagement must come together with a comprehensive plan to provide alternatives for embracing all the community without exceptions.

The study is addressing the potential effect the civic engagement platforms can have on the decision making process in Valencia. The validation of the study shows that the work invested in the selected platform is a work that still needs to get improved on the technical level.

## Study Limitations

This study was subject to a few limitations. Firstly the study is specific to Valencia city in Spain. This limitation is not only geographical or cultural because of the city and the country, but also political, because one of the main sources in choosing the platform and developing it in the way it turned out finally was the formal requirement of the project Red Cívica Local—the project requirements were written by the Valencian City Council under the Spanish government supervision. The second limitation was the time. Due to the nature of this study that it had to be concluded in a specific period of time, affected many aspects of the study.

Because of time restriction, the outcome platform is incomplete in many ways. Most significantly, quality control measures were not executed on the platform. The platform is enormous in size and is full of tools and functions, that is why the basic testing that was done only by the authors of the study is simply not adequate. The process of quality control and fixing for such a big platform can take a long time and effort as well which was not possible for this study.

Moreover because of the time limitation, the validation had to be carried out by different stakeholders than the actual stakeholders of the project. Ideally the validation should have been carried out by Valencia's citizens associations—the same ones that participated during the first participatory workshop. As a result of this, only 10 participants could validate the platform instead of potentially 30 to 50 participants if the city council was the inviter again. Lastly, the project Red Cívica Local is still in an early stage of development. That means if the study conclusion could have been postponed few more months, a prototype platform could have been released to the public in Valencia and results would have been more reasonable.

# Annexes

## Annex 1 - Associations Invitation Brochure

**Plataforma Electrónica Red Cívica Local**, un proyecto impulsado por Red.es y el Ayuntamiento de Valencia



¿Eres miembro de alguna asociación, organización o entidad ciudadana valenciana? Te invitamos a que participes en el diseño de una plataforma web, **¡una red social!** que ayudará a crear un novedoso nexo entre la ciudadanía, organizaciones cívicas y la administración de la ciudad de Valencia.

La Plataforma Electrónica Red Cívica Local persigue dotar a las asociaciones y colectivos de la ciudad de un espacio virtual donde puedan difundir sus actividades, eventos y proyectos y contribuir a mejorar la cohesión social y la participación.

**¡Buscamos tu ayuda!** Tus propuestas e ideas nos ayudarán a conocer mejor las necesidades actuales de ciudadanos y organizaciones y diseñar mejor una novedosa red social ciudadana.

Para participar en este evento entra en el siguiente enlace y completa su formulario. Invita también a otras personas conocidas que participen activamente en otras organizaciones. Entre todas y todos conseguiremos crear sinergias y dotar a la ciudadanía de un empoderamiento para mejorar nuestra sociedad.

Participa en el diseño colaborativo de esta plataforma haciendo clic aquí:



### **Estimada amiga, querido amigo:**

Desde el área de innovación y participación ciudadana del ayuntamiento de Valencia se está elaborando una estrategia global de participación y colaboración para conectar a las personas con todo aquello que ocurra en su entorno local, fomentar el asociacionismo y facilitar la corporación en un mejor entendimiento de las necesidades reales de la ciudadanía.

Para ello se ha comenzado el diseño de una plataforma digital llamada Red Cívica Local que a través de una red social permitirá crear un novedoso nexo entre la ciudadanía, organizaciones cívicas y la administración de la ciudad.

Esta plataforma web cuenta con una serie de funcionalidades que permitirán a las organizaciones, entidades y ciudadanos conectarse utilizando la propuesta red cívica para:

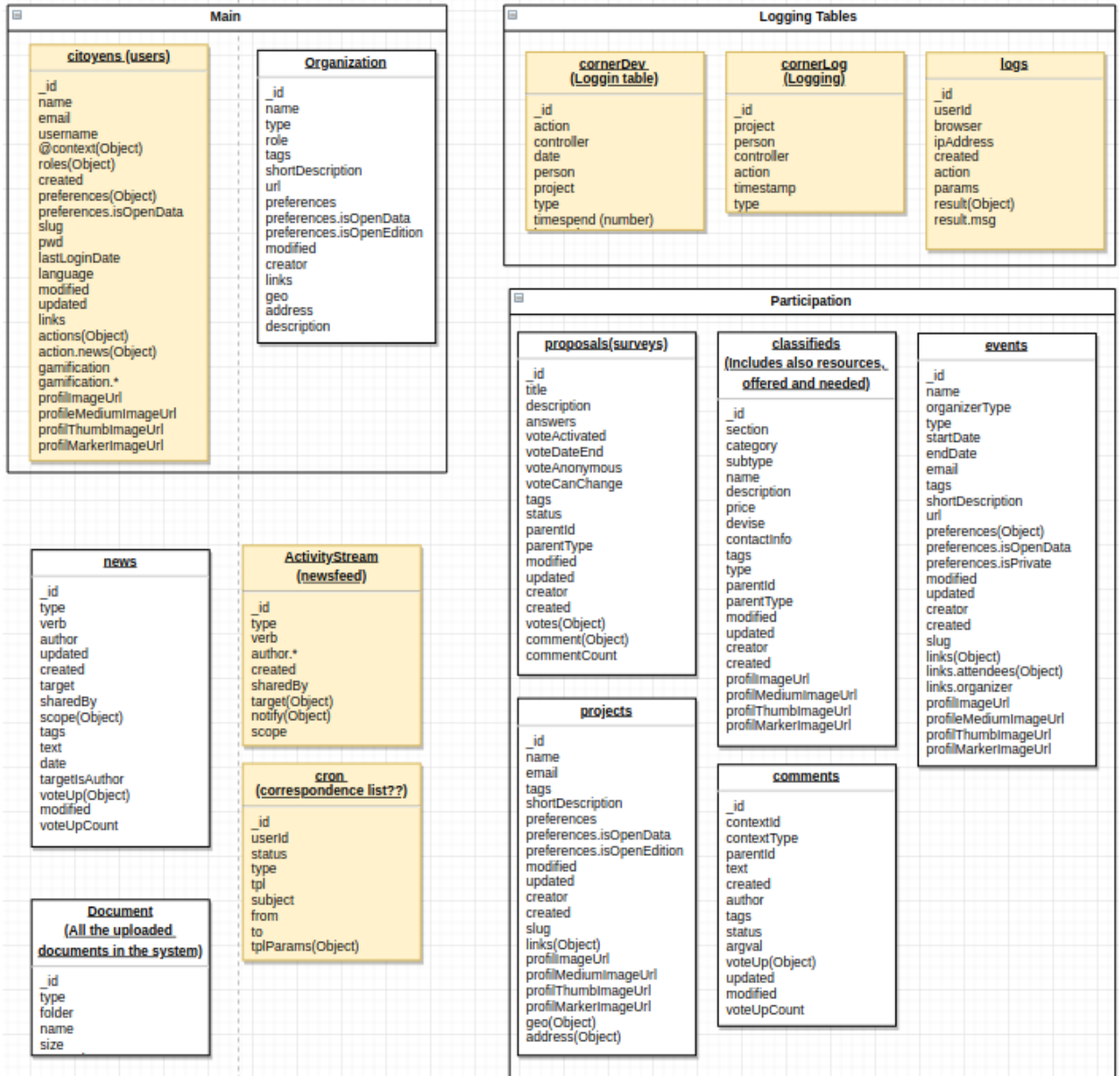
- Crear una página web personalizada para cada organización/entidad
  - Gestionar el contenido de la página (texto, imágenes y vídeos)
  - Gestor de boletines electrónicos
  - Gestor de noticias y formularios
  - Gestor de usuarios
  - Gestor de encuestas, blogs y wikis
  
- Crear eventos e invitar participantes. Gestionar y comunicarse con participantes
- Inscribirse a eventos y recibir sus correspondientes notificaciones
- Ver otros participantes que atenderán el evento y comunicarse con ellos
- Compartir eventos a través de redes sociales
- Herramienta de búsqueda de otras organizaciones/entidades
  - Búsqueda por filtros
  - Seguir las actividades de una organización (suscribirse)
  - Pedir ingreso a una organización

Tu ayuda en el diseño colaborativo de esta plataforma incluye asistir a un evento de presentación en donde podrás escuchar nuestras ideas y aportar las tuyas basadas en tu experiencia como miembro de una organización/entidad.

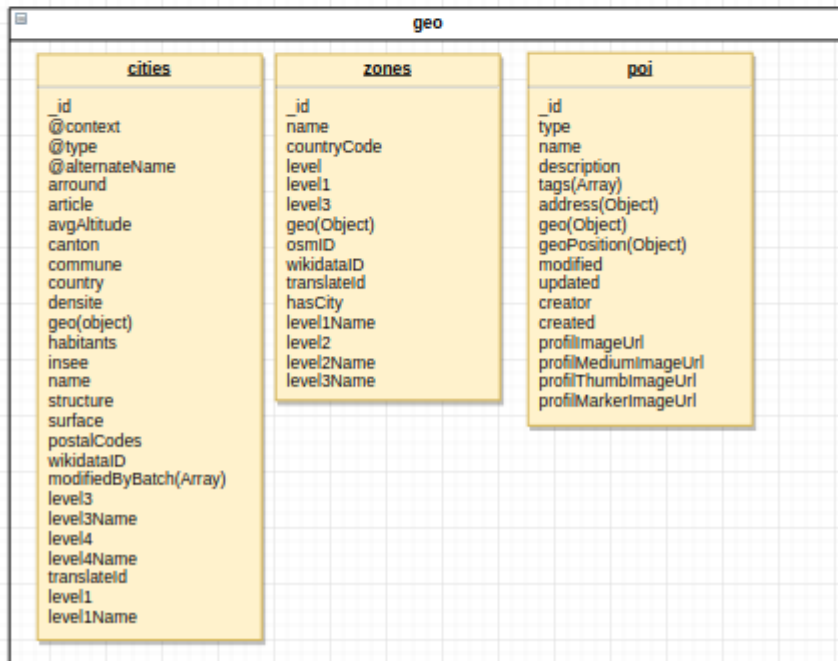
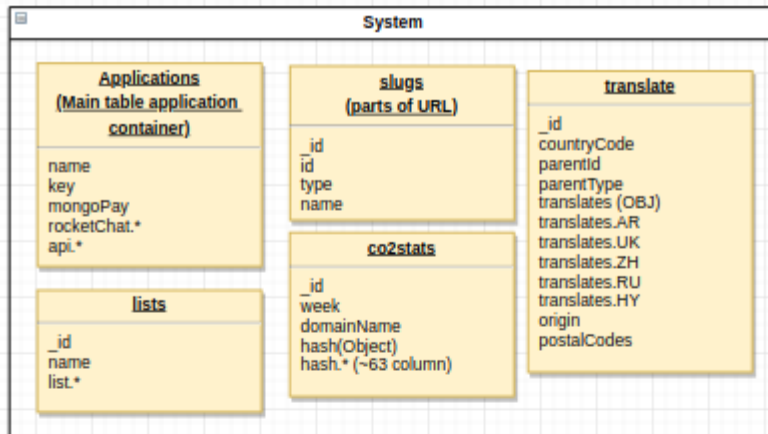
Además, podrás colaborar en la mejora de ésta plataforma durante su etapa de diseño utilizándola para gestionar actividades comunes que realizas en tu organización como la creación y planificación de un evento y la gestión de participantes y contenido necesario para su correcto desarrollo.

Para inscribirte y colaborar en esta iniciativa entra a este en enlace y completa el formulario: [\[enlace\]](#)

## Annex 2 - Commuecter Database Architecture







## Annex 3 - Comparison Matrix

Requirements	Commune- ter	Consul	Decidim	Liferay	ArcGIS Hub
Content manager based on free software	Covered (PHP)	Covered (Ruby on rails)	Covered (Ruby on rails)	To Be Developed (Only the community edition, and it's based on Java)	No Esri proprietary
Configurable and OOD	Covered	Covered	Covered	Covered	N/A
Based on standard development languages	Covered	Covered	Covered	Covered	N/A
Responsive design	Covered	Covered	Covered	Covered	Covered
2000 microsites, configurable maximum capacity to each one	Covered	To Be Developed	Covered	Covered	Covered
Compliance with Accessibility of W3C and UNE 139803: 2012	To Be Developed	To Be Developed	Covered	Covered	Covered
Localizable to Spanish	Covered	To Be Developed	Covered	Covered	No
Content Management Admin Tool					
Wikis	Covered	To Be Developed	Covered	Covered	No
Real-time updates + preview	Covered	Covered	To Be Developed	Covered	Covered
Templates					
Content lifecycle	To Be Developed	To Be Developed	Covered	To Be Developed	No
Folksonomy/collaborative tags	To Be Developed	To Be Developed	To Be Developed	To Be Developed	No
Semantic enrichment	To Be Developed	To Be Developed	To Be Developed		
Geolocalization	Covered	Covered	Covered	Covered	Covered

Authentication with username/password and ID	To Be Developed	To Be Developed	Partially Covered	To Be Developed	No
SEO optimization	To Be Developed	To Be Developed	Partially Covered	To Be Developed	Covered
Google analytics enabled					Covered
Integration with social media networks	To Be Developed	Covered	Covered	Covered	Covered
Integration with VLCi	To Be Developed	To Be Developed	To Be Developed	To Be Developed	N/A
Integration with Registro Municipal de Entidades del Ayuntamiento	To Be Developed	To Be Developed	To Be Developed	To Be Developed	N/A
<b>Modules</b>					
<i><b>Calendar Manager</b></i>					
List of events, in list and map format	Covered	To Be Developed	Covered	Covered	Covered
Filtering events	Covered	To Be Developed	Covered	To Be Developed	Covered
User customization for the agenda	Partially Covered	To Be Developed	Partially Covered	To Be Developed	No
Event notifications	Covered	To Be Developed	Covered	To Be Developed	Covered
RSVPs	Covered	To Be Developed	Covered	To Be Developed	Covered
List of people/orgs signed up for event	Covered	To Be Developed	Partially Covered	To Be Developed	Covered
Sharing events on social media	Covered	To Be Developed	Covered	Covered	Covered
Export. (iCal, Google Calendar, maps, geoRSS).	Partially Covered	To Be Developed	Partially Covered	Covered	No
<i><b>Institutional advertisement manager</b></i>					
Campaigns Creation	To Be Developed	To Be Developed	Covered	To Be Developed	No
Campaigns Managing	To Be Developed	To Be Developed	Covered	To Be Developed	No

<b>Images and Video Manager</b>					
Module that categorizes videos and images	To Be Developed	To Be Developed	To Be Developed	To Be Developed	No
<b>Languages Module</b>					
Personalization at least in Spanish and English	Covered	Covered	Covered	To Be Developed	Covered
Translation Admin Tool	To Be Developed	To Be Developed	To Be Developed	To Be Developed	No
<b>Newsletter Manager</b>					
Electronic Newsletter	Covered	Covered	Covered	Covered	No
<b>News Manager</b>					
News manager	Covered	To Be Developed	Covered	Covered	No
<b>Static Pages Manager</b>					
Administering and editing the existing contents	To Be Developed	Partially Covered	Covered	Covered	Covered
Static pages should be able to be associated with calendar events	To Be Developed	To Be Developed	To Be Developed	To Be Developed	No
<b>Forms Manager</b>					
Module to Create Forms	Covered	To Be Developed	Covered	Covered	Covered
Downloadable in Excel Format	To Be Developed	To Be Developed	To Be Developed	Covered	No
<b>Users Manager</b>					
Users Manager	Covered	Covered	Covered	Covered	Covered
Specific user category for groups	Covered	To Be Developed	Covered	Partially Covered	Covered
Minimum requirements based on the requirement sheet	Partially Covered	To Be Developed	Partially Covered	Partially Covered	Partially
<b>Graphic Images</b>					
Complete graphic customization by thematic areas	Partially Covered	Partially Covered	Covered	Covered	Partially
Editing Templates	To Be Developed	To Be Developed	Covered	Covered	Covered
Templates are of homogeneous	Covered	To Be	Partially	To Be	Covered

style and responsive		Developed	Covered	Developed	
Templates SEO compliant	To Be Developed	To Be Developed	To Be Developed	To Be Developed	No
<b><i>Participation Module - For Association</i></b>					
Widgets System	To Be Developed	To Be Developed	To Be Developed	Covered	Covered
Comments	Covered	Covered	Covered	Covered	Covered
Initiatives	To Be Developed	Covered	Covered	To Be Developed	Covered
Gallery	Covered		Covered	Covered	No
Polls	To Be Developed	Covered	Covered	Covered	Covered
Feedback	To Be Developed	To Be Developed	To Be Developed	To Be Developed	No
Blogs	To Be Developed	To Be Developed	Covered	To Be Developed	No
Wikis	To Be Developed	To Be Developed	Covered	To Be Developed	No
Workflow and Contents Lifecycle	To Be Developed	To Be Developed	Covered	Covered	No
Semiautomatic Moderation	Covered	Covered	Partially Covered		No
Directory of People and Entities	Covered	Covered	Covered	Covered	Covered
Open source document and version control	Covered	Covered	Covered	Covered	No
Will allow events managing	Covered	To Be Developed	Partially Covered		Covered
Social plugins	Covered	Covered	Covered	Covered	Covered
Atom, RSS, geoRSS	To Be Developed	Covered	Partially Covered	To Be Developed	No
Communication among users and communities	Covered	Covered	Covered	Covered	No
Microdonations for Events and Organizations	To Be Developed	To Be Developed	Partially Covered - Using third-party Apps	To Be Developed	No

Resources Bank	Covered	To Be Developed	Covered	To Be Developed	No
Winning Reputation (Gamification)	Covered	To Be Developed	Covered	To Be Developed	No
<b><i>Associations and Groups Manager</i></b>					
Creation of Private Spaces (Microsites)	Covered	To Be Developed	Covered	To Be Developed	Covered
Editing and Managing CMS	To Be Developed	To Be Developed	Partially Covered	To Be Developed	Covered
Will avail a private space	Covered	To Be Developed	Covered	To Be Developed	Covered
The maximum storage capacity that can be parameterized	To Be Developed	To Be Developed	Partially Covered	To Be Developed	No
Organizations can adjust functions of the systems to work differently for them	-	-	Covered	To Be Developed	
Organizations List	Covered	To Be Developed	Covered	To Be Developed	Covered
Organizations List Filtering	Covered	To Be Developed	Covered	To Be Developed	Covered
Information About Organizations	Covered	To Be Developed	Covered	To Be Developed	Covered
Follow an Organization	Covered	To Be Developed	Partially Covered	To Be Developed	No
Ask for membership in an organization	Covered	To Be Developed	Covered	To Be Developed	Covered
<b><i>Search</i></b>					
Internal Search	Covered	Covered	Partially Covered	Covered	Covered
Displaying Information as a Table	To Be Developed	To Be Developed	To Be Developed	To Be Developed	Covered
<b><i>Accessibility</i></b>					
Accessibility WAI AA	To Be Developed	To Be Developed	To Be Developed	Covered	Covered
Internal Tool for Self Validation	To Be Developed	To Be Developed	To Be Developed	Covered	No
<b><i>Analytics and Statistics</i></b>					

Internal Statistics and Google Analytics	Covered	Covered	Covered	Covered	Covered
<i>Adapting to L.O.P.D. (Privacy Laws)</i>					
Current regulations on data protection	To Be Developed	To Be Developed	Covered	Covered	Covered
<i>Integration with the Open Data Portal of the City Hall of Valencia</i>					
Automatic Access to the information available in the Open Data Portal					

## Annex 4 - Validation Workshop Brochure

Master  
of Science  
in **Geospatial  
Technologies**

# Red Cívica Local

**UNIVERSITAT  
JAUME I**

<div style="border-bottom: 1px dashed white; padding: 5px 0 5px 0;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">¡Qué!</p> <p style="font-size: 0.7em; margin-top: 5px;">¿Buscas oportunidades de voluntariado e impactar en la universidad?</p> </div> <div style="text-align: center;"> <p style="font-size: 0.7em; margin-top: 5px;">¿Estás interesado(a) en rediseñar y remodelar las futuras plataformas de participación cívica?</p> </div> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; padding: 5px 0 5px 0;"> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">¿Cómo?</p> <p style="font-size: 0.7em; margin-top: 5px;">Se parte del taller participativo para evaluar la potencial plataforma de participación cívica para la ciudad de Valencia</p> </div> <div style="text-align: center;"> </div> </div>	<div style="border-bottom: 1px dashed white; padding: 5px 0 5px 0;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">What!</p> <p style="font-size: 0.7em; margin-top: 5px;">Looking for volunteering opportunities and make an impact right at the university?</p> </div> <div style="text-align: center;"> <p style="font-size: 0.7em; margin-top: 5px;">Interested in redesigning and reshaping the future Civic Engagement Platforms?</p> </div> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; padding: 5px 0 5px 0;"> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">How?</p> <p style="font-size: 0.7em; margin-top: 5px;">Be a part of participatory workshop to evaluate the potential Civic Engagement Platform for Valencia</p> </div> <div style="text-align: center;"> </div> </div>
<div style="border-bottom: 1px dashed white; padding: 5px 0 5px 0;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> <p style="font-size: 0.7em; margin-top: 5px;">Únete a nosotros en la UJI, Españec 2, en la segunda planta, el próximo jueves 31 de enero 2019</p> </div> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">¿Cuándo? y ¿Dónde?</p> </div> </div> </div>	<div style="border-bottom: 1px dashed white; padding: 5px 0 5px 0;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> <p style="font-size: 0.7em; margin-top: 5px;">Join us at UJI, Españec 2, 2nd Floor On Thursday, January 31st 2019</p> </div> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">When? and Where?</p> </div> </div> </div>
<div style="border-bottom: 1px dashed white; padding: 5px 0 5px 0;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">¿Listo(a)?</p> <p style="font-size: 0.7em; margin-top: 5px;">El taller tendrá una duración aproximada de 2 horas.</p> </div> <div style="text-align: center;"> <p style="font-size: 0.7em; margin-top: 5px;">Trae tu portátil y tu creatividad contigo. El café y los aperitivos corren por nuestra cuenta.</p> </div> <div style="text-align: center;"> </div> </div> </div>	<div style="border-bottom: 1px dashed white; padding: 5px 0 5px 0;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;"> <p style="background-color: #0056b3; color: white; padding: 2px 5px; font-weight: bold; font-size: 0.8em;">Ready?</p> <p style="font-size: 0.7em; margin-top: 5px;">The workshop is estimated to last for approximately 2 hours</p> </div> <div style="text-align: center;"> <p style="font-size: 0.7em; margin-top: 5px;">Bring your laptop, and your creativity over with you :) Coffee and snacks are on us</p> </div> <div style="text-align: center;"> </div> </div> </div>

Inscripciones <http://bit.ly/workshop-red-civica> Register here

Echa un vistazo a la plataforma <http://elcano.init.uji.es:5080/> Check out the platform

Este taller forma parte de una investigación académica, al mismo tiempo, forma parte del proyecto en curso del Ayuntamiento de Valencia. Apoyanos!

This is a part of academic research and at the same time also a part of an on-going project by the City Hall of Valencia



## Annex 5 - Validation Workshop Invitation Message

English below:

Queridos estudiantes,

Os escribo porque creo que todos vosotros podríais estar interesados/as en apoyar soluciones creativas a los problemas actuales sobre el compromiso ciudadano, democracia participativa y la inclusión en general.

Como estudiante de Master de Tecnologías Geoespaciales, en el grupo Geotec (grupo de investigación de la UJI en tecnologías geoespaciales) y como un parte del proyecto en curso en Valencia llamado "Red Cívica Local", hemos desarrollado una plataforma prototipo en forma de red social cívica que debería diseñarse de forma que fomente el compromiso cívico de los ciudadanos y sus asociaciones.

Te invitamos a ser parte del piloto que nos permitira adecuar la plataforma de modo que incluya requerimientos concretos y retroalimentacion ciudadana. Vamos a realizar un taller participativo donde se mostrará esta plataforma, y se te permitirá probarla y ponerte en el lugar de los ciudadanos/as y las asociaciones de Valencia, para decidir sobre la eficacia de esta herramienta. Tu participación va a ser una parte importante de este estudio y tu contribución complementará el desarrollo de esta plataforma en Valencia en un futuro muy próximo.

El taller tendrá lugar la próxima semana el jueves 6 de febrero en la UJI, Espaitec 2, Segunda Planta. Se estima que el taller durará unas 2 horas a partir de las 14:30.

Todos los contenidos de este taller serán bilingües (español y inglés) incluyendo la propia plataforma.

Echa un vistazo al folleto del taller y inscríbete hoy :)

Dear students,

I am writing to you because I believe that all of you may be interested in supporting creative solutions to the current problems of citizen engagement, participatory democracy and inclusivity at large.

As a Master of Geospatial Technologies student, in the Geotec group (UJI's research group on geospatial technologies) and as part of the ongoing project in Valencia called "Red Cívica Local", we have developed a prototype platform in the form of a civic social network that should be designed in a way that fosters civic engagement of citizens and their associations.

We invite you to be part of the pilot that will allow us to adapt the platform to include specific requirements and citizen feedback. We are going to carry out a participative workshop where this platform will be shown, and you will be allowed to test it and put yourself in the place of the citizens and associations of Valencia, to decide on the effectiveness of this tool. Your participation will be an important part of this study and your contribution will complement the development of this platform in Valencia in the very near future.

The participatory workshop will take place next week on Thursday, February 6th at UJI, Espaitec 2, Second floor. The workshop is estimated to last around 2 hours starting 14:30.

All the contents in this workshop will be bilingual (English and Spanish) including the platform itself.

Please have a look at the workshop brochure and register today :)

## Annex 6 - Participatory workshop photos



Photo (1) - Red Cívica Local Presentation Cover Page



Photo (2) - Some of the Participants from the Associations



Photo (3) - Andrés Muñoz (UJI team) Presenting



Photo (4) - Interactive Session by Scanning QR Codes and Answering Questions

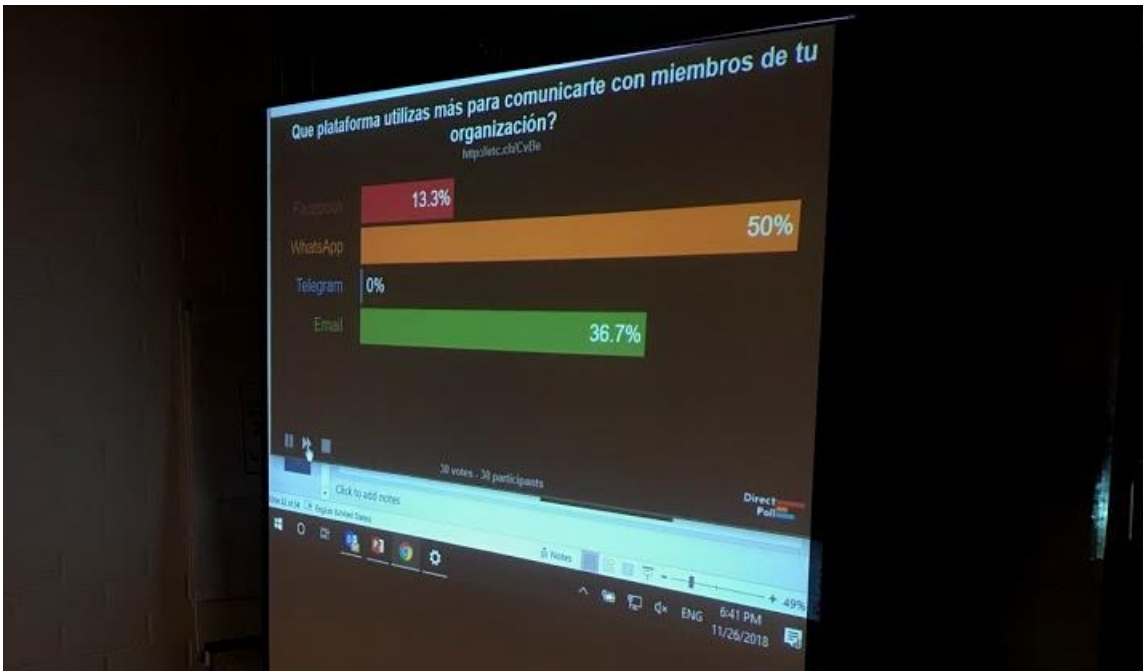


Photo (5) - Interactive Session Answers Interactively on Screen



Photo (6) - Back View for Some of the Participants

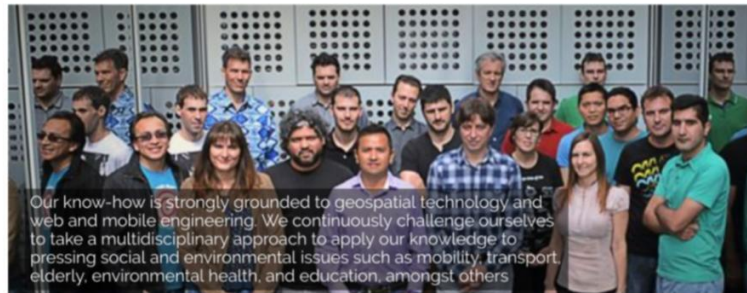
## Agenda

- |                                     |   |
|-------------------------------------|---|
| 1. Who are we and what do we do?    | 1. ¿Quiénes somos y qué hacemos?          |
| 2. Why are you "specifically" here? | 2. ¿Por qué estás "específicamente" aquí? |
| 3. What is Red Cívica Local?        | 3. ¿Qué es la Red Cívica Local?           |
| 4. Have a look!                     | 4. ¡Echar un vistazo!                     |
| 5. Explore ...                      | 5. Explorar ...                           |
| 6. Fill a survey                    | 6. Llenar una encuesta                    |
| 7. Discuss                          | 7. Discutir                               |



Who are we?  
And what do we do?

¿Quién somos?  
¿Y qué hacemos?



Why are you here?

¿Por qué estás aquí?

We did some **work!**  
¡Hicimos un poco de **trabajo!**

We **think** that it is perfect  
**Pensamos** que es perfecto

We want you to say **Yes** it is  
Queremos que digas que **sí** lo es.

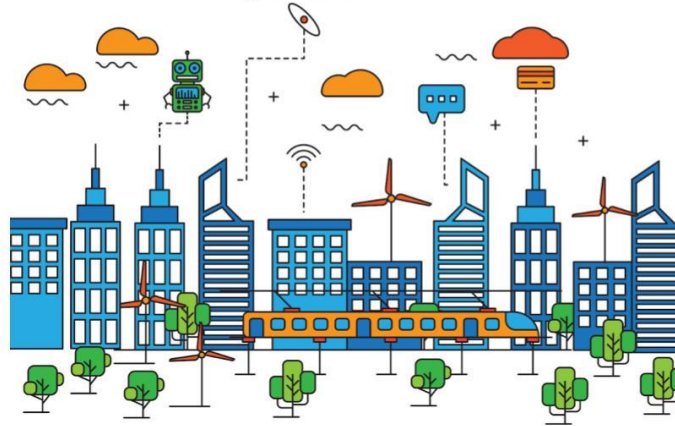
Why specifically you?

¿Por qué específicamente tú?

Or **No** it is not!  
O **¡No** no lo es!

¿Qué es Red Cívica Local?

Bienvenido a la **Red Cívica** de la ciudad de **Valencia**

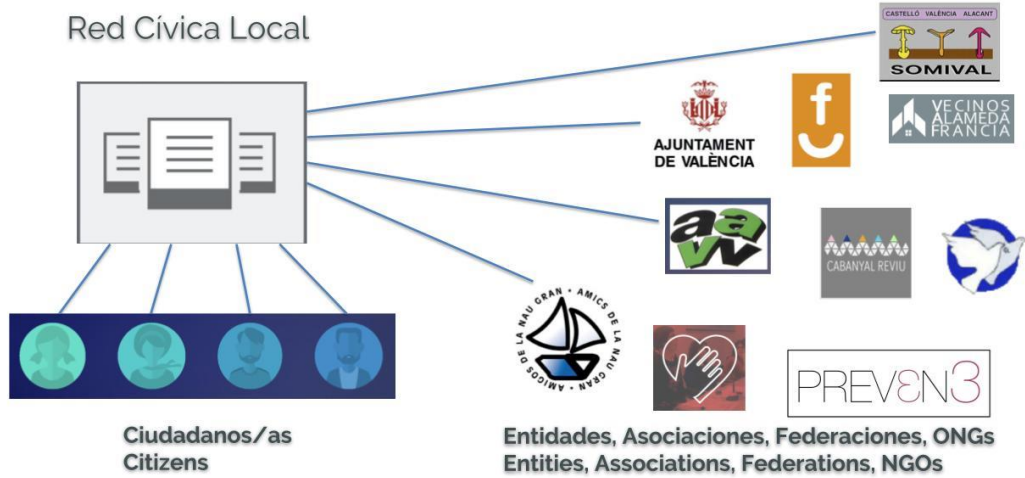


What is Red Cívica Local?

Tecnología, Procesos y Personas  
Technology, Processes and People



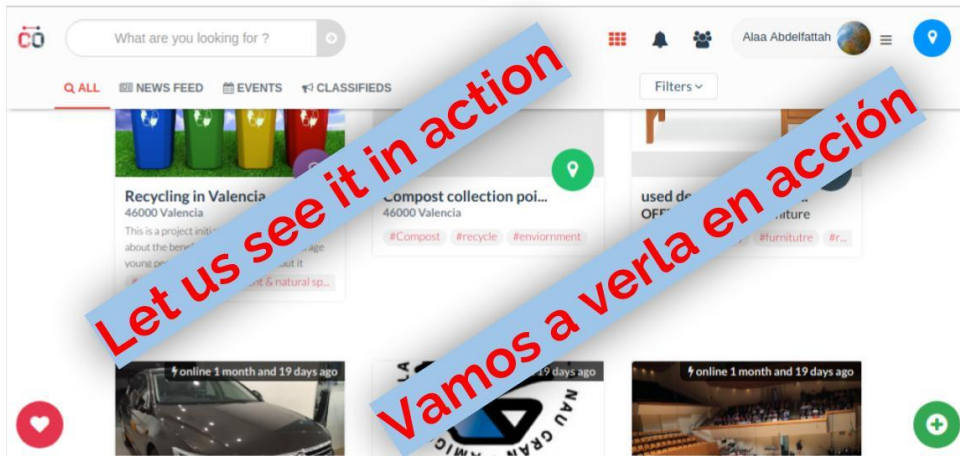
Red Cívica Local







Fomentar el trabajo colectivo de las organizaciones  
Promote the collective work of organizations



And now let the fun begins!

1. Browse to [bit.ly/redcivica](http://bit.ly/redcivica)
2. Create your **citizen** account
3. And start **exploring**



¡Y ahora empieza la diversión!

1. Ir a [bit.ly/redcivica](http://bit.ly/redcivica)
2. Crea tu cuenta de **ciudadano**
3. Y empieza a **explorar**



And then, start the assessment :

**Imagine a real scenario**

1. Create an Organization
2. Create a project
3. Create an event
4. Check the map



Y luego, comienza la evaluación:

**Imagina un escenario real**

1. Crear una organización
2. Crear un proyecto
3. Crear un evento
4. Mira el mapa



Some recommendations:



Which feature you would add, or which feature you would change for a better civic engagement platform?



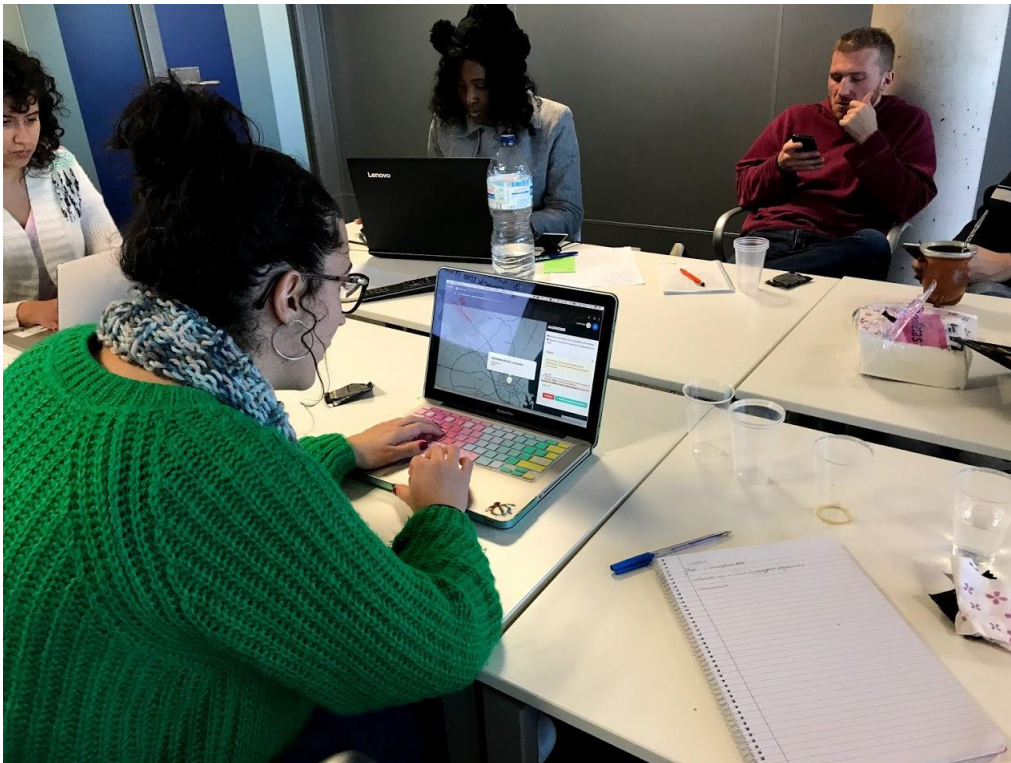
Can you project this  
on your city, or does  
your city have  
something similar?

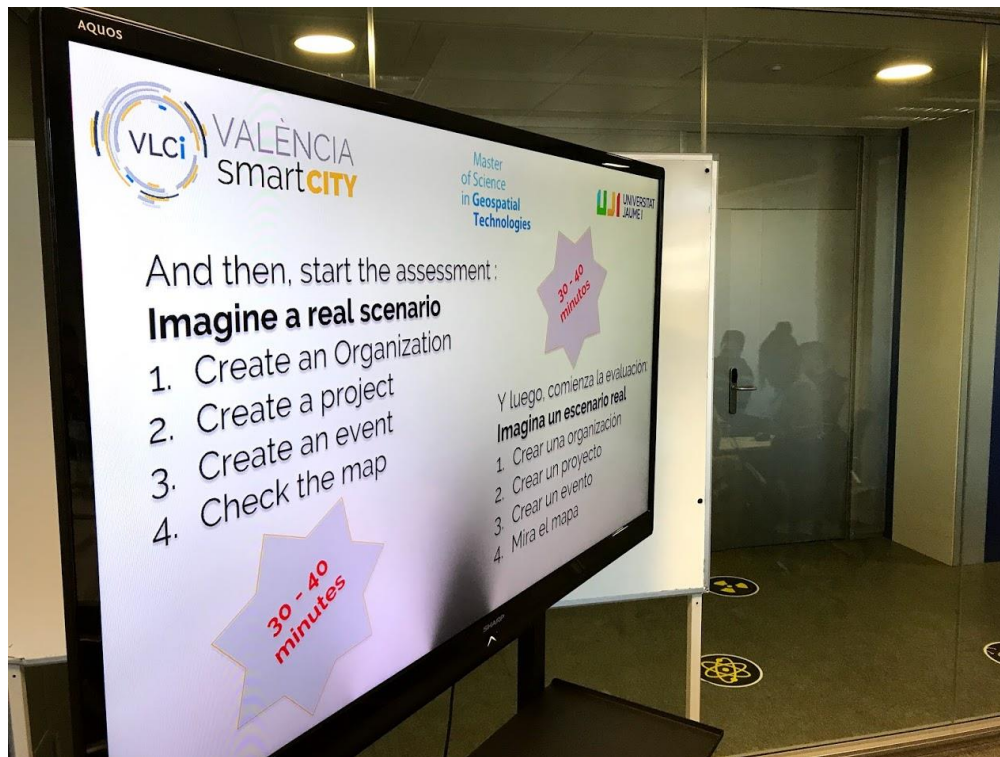


Do you think having  
the map can improve  
engagement?



## Annex 8 - Validation participatory workshop photos





Español abajo 🇪🇸 Q1. How do you evaluate the importance of the features you tested in a Civic Engagement Platform?

	Extremely Useless	Useless	Neutral	Useful	Extremely Useful
Events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surveys	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social Networking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2. Generally, how good was your experience with the platform? / En general, ¿qué tan buena fue tu experiencia con la plataforma?

	1	2	3	4	5	6	7	8	9	10	
Very Bad / Muy mal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Excellent / Excelente

⋮

Q3. During the test did you choose to be a part of an entity (association, NGO, \* etc...)? / Durante la prueba, ¿eligiste ser parte de una entidad (asociación, ONG, etc ...)?

- Yes / Sí
- No / No

# Entity Information / Información de la Entidad

Description (optional)

**Q4. Which entity did you choose to be part of? / ¿A qué entidad elegiste formar parte?**

Short answer text  
.....

**Q5. What position did you choose to perform in your conceptual entity? / ¿Qué posición eligiste desempeñar en tu entidad conceptual?**

Short answer text  
.....

**Q6. To which sector does your entity belong? / ¿A qué sector pertenece tu asociación?**

- Neighbourhood / Vecinal
- Cultural / Cultural
- Educational /Educativo
- Social Action / Acción Social
- Other...



# Events Element | Elemento de Eventos

Description (optional)

Q7. How satisfied were you using the "Events" feature in the platform? / ¿Qué tan satisfecho(a) estaba usando la función "Eventos" en la plataforma?

- Satisfied / Satisfecho(a)
- Neutral / Neutral
- Dissatisfied / Insatisfecho(a)

Q8. How easy was it to use the "Events" feature? / ¿Qué tan fácil fue usar la función "Eventos"?

- Easy / Fácil
- Normal / Normal
- Difficult / Difícil

...

Q9. How can we improve the "Events" feature in the future? / ¿Cómo podemos mejorar la función de "Eventos"?

Long answer text

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# Projects Element / Elemento de Proyectos

Description (optional)

Q10. How satisfied were you using the "Projects" feature in the platform? / ¿Qué tan satisfecho(a) estaba usando la función "Proyectos" en la plataforma?

- Satisfied / Satisfecho(a)
- Neutral / Neutral
- Dissatisfied / Insatisfecho(a)

Q11. How easy was it to use the "Projects" feature? / ¿Qué tan fácil fue usar la función "Proyectos"?

- Easy / Fácil
- Normal / Normal
- Difficult / Difícil

...

Q12. How can we improve the "Projects" feature in the future? / ¿Cómo podemos mejorar la función "Proyectos" ?

Long answer text

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# Map Element / Elemento de Mapa

Description (optional)

Q13. How satisfied were you using the "Map" feature in the platform? / ¿Qué tan satisfecho(a) estaba usando la función "Mapa" en la plataforma?

- Satisfied / Satisfecho(a)
- Neutral
- Dissatisfied / Insatisfecho(a)

Q14. How easy was it to use the "Map" feature? / ¿Qué tan fácil fue usar la función "Mapa"?

- Easy / Fácil
- Normal / Normal
- Difficult / Difícil

...

Q15. How can we improve the "Map" feature in the future? / ¿Cómo podemos mejorar la función "Mapa"?

Long answer text

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Q16. In your own words, what can we improve in our next version to have an effective Civic Engagement Platform? / En tus propias palabras, ¿qué podemos mejorar en nuestra próxima versión para tener una plataforma de participación cívica realmente efectiva?

Long answer text

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