# Changing civil society in Spain through transparency and civic technologies

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Abstract

This paper addresses the role of open data in the development of civic technologies in Spain. We have analysed organisations that are using technology as a tool to improve transparency, democracy and citizen participation in public matters. During this research we run through the evolution of the use of technologies by civil society in Spain, we define the concept of civic technologies and propose a set of typologies, paying special attention to the source of data, with the final aim of knowing how often public open data has been used. We conclude by highlighting the need to increase the communication between public and private institutions and the organisations that use data in favour of providing useful information and making easier the development of civic technologies.

Keywords: civic participation; open data; transparency; Spain; civic technologies; accountability; public sphere

## Introduction. Crisis, network culture and new "democratic demands".

The aim of this investigation is to analyse the role of open data in the development of civic technologies in Spain. The study exposes among other issues the number of civic technologies that are currently working in Spain presented by year of release (between 2009 and 2015). We have considered the websites and applications that continue online, the kind of public institution that support them (local, regional or national), the source of data that has been used to create the applications and whether they use open source and free licenses.

The coincidence of a period of crisis (since 2008), development of a *network culture* and outbreak of the social protest (born in 2011) followed by a period of democratic regeneration (leaded by the irruption of new political parties which main claim is the need of accountability) has triggered the creation of technological projects in Spain which aim to increase and improve transparency, democracy and citizen participation in public matters.

The *15M movement* (Lozano and Serra, 2011)[1] for example was, among many other things, a project hatcher that fostered the creation of solutions for problems that the civil society had with internal communication and participation in decision making. From that moment, many initiatives have been launched that improve internal communication but also build bridges for participation and collaboration with public institutions. Some of the new political parties that have emerged in Spain in the last years are using those tools to integrate citizens in their internal decision making processes. A good example is "Plaza podemos", a space for political participation

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[1] 15M is a new social movement that was born after a demonstration that took place on 15th May 2011, in which technology had a main role before and after organising it. People started debating physically and virtually about many issues in squares and public spaces throughout the country.

where people can debate, propose initiatives and share ideas; another example is how Equo used "Agora voting" to decide their vote position in different issues such as the transparency law.

Technological development has altered the usual characteristics of political actions, both by implementing more institutionalized forms of participation and by engaging a broader and more organized citizenship. Traditionally, civil society came to denote that sphere of active voluntary associations and organizations, distinct from state and economy, through which social cooperation and collective action takes place (Beissinger, 2013).

The use of digital tools can increase the capacity of institutions to establish greater contact and proximity with citizens by expanding and renewing democratic engagement.

However, in many cases, innovations in the use of technologies applied to political participation come exclusively from civil society (understood as those entities (Sampedro,2000) that do not pretend to exercise or comprehend the power but rather to have an influence on it in a partial and intermittent way). These types of organisation and collectives conceive these tools as the basis and foundation of their strategy (Van Laer and Van Aelst, 2010) as well as a method to reduce gaps and exclusions with the central public sphere, to access the media and to gain visibility into their causes and claims.

We must also mention the new profile of organized citizens, part of a civil society that has transformed somehow into news production agents (expanding approaches, attributing responsibilities, etc.), that through the use of technology complement the action and the reflection with the production of data.

Foth and Brynskov (2015) suggest that "the future of civic engagement is characterised by both technological innovation as well as new technological user practices that are fuelled by tends towards mobile, personal devices; broadband connectivity; open data; urban interfaces; and, cloud computing".

When referring to civic technologies we mean the group of tools, understood as categories for the resolution of problems but also as technologies for the action, that are provoking changes in the traditional social, political and democratic structures. Javier de la Cueva (2015) talks about *micropolitical actions* where a minority makes a first action, announce it publicly and then a community join to it.

During this study we will analyse the main civic technologies that have been created in the last few years in Spain, paying special attention to those that use open public data. Zittrain (2009) point out that "these technologies are not constrained by government or commercial gatekeepers, but instead are untethered platforms for the generation of further innovations".

Erhardt Graeff (2014) finds that "in order to raise levels of participation in community projects and expand the range of voices heard in governmental decision-making, there is a need for civic technology that is lightweight and compelling enough to enjoy continued use and to promote civic learning".

The singularity of civic technologies based on the reuse of public data is that they allow explain rigorously and precisely the functioning of public institutions and decision making processes. Very often those data are essential to building and structuring campaigns of civil society. They deliver an essential knowledge to ensure that everyone can understand the functioning of the structures of power more comprehensively.

Over the last years, civil society organisations defending transparency and open data have proliferated in Spain. Autonomously and in coordination, these organisations demanded the adoption of a transparency law in Spain in line with international standards. *Civio, Access Info Europe, Qué hacen los diputados or Openkratio* were not seeing transparency as their final goal (Anderica, 2013), they demanded data as a condition or vehicle to

participate in the definition of public policies and as a base to generate digital tools that would promote and facilitate the understanding of public structure and public participation.

In Spain, the Open Data movement has been driven and built from the very beginning by individuals, civil society organisations and public officials who believed in the development of transparency policies. This situation has fostered the creation of public open data portals in Spain where today there are 45 in different administrative levels[2].

In order to analyse these issues, we will first define the role of civic technologies in the public sphere. In a second place, we will define the characteristics of civic technologies and its expansion in Spain in detail.

We believe that the Spanish case is exceptional for analysing the open data culture because it is marked by a generational event (the 15M movement) that marks a before and after in the democratic life of Spain. Without being decisive in the creation of the open data movement, it was a detonator that embraced the creation of open data projects with a social goal.

**The new public sphere: from squares to the net (the emergence of a data culture).**

The public sphere, conceived as a space for interaction and mediation between citizens and the State (Habermas, 1964), is being transformed by global processes and by technological development. This new scenario of action define new profiles and produces different communication patterns in which governments, media and civil society establish different mechanisms of collective action even though traditional networks continue to play a relevant role in contentious action.

The democratic crisis, understood as the lack of response from the political actors to the demands of citizens, is promoted by the limitations and contradictions of the space where the actors (public institutions and citizens) relate to each other and exchange views. A democratic space in which public interests, opinions, agendas and problems should be formed, transformed and exchanged by a proactive citizen participation (Robertson, Vatrapu and Medina: 2010, 13).

As Della Porta and Diani explain (2006: 35), "social change may affect the characteristics of social conflict and collective action in different ways. It may facilitate the emergence of social groups with a specific structural location and potential specific interests".

Spain has had different periods where demonstrations and civic movements emerged with a strong impact. Two concrete examples are the demonstrations that happened during the *No a la Guerra*[3] movement (Not to war, 2003) and during the 15M movement (May 2011).

Those mobilizations led to an intensive use of technology that civil society organisations and citizenry applied to extend the protest but also to make its organisation more democratic and to facilitate the access to the central public sphere (Dahlgren, 2005). It has also led to the creation of people's own tools that seek to enhance political, economic and social change (Benkler, 2006).

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[2] See: http://datos.fundacionctic.org/sandbox/catalog/faceted/
[3] Protest movement against the war on Iraq.

During the transition to democracy in the late 70's and early 80's, representatives of the civil society moved to lead and integrate themselves into the different political parties. That fact, even if reasonable for the period, severely weakened the action of the civil society in Spain until the mid-90's, when social mobilisation was reactivated (Subirats, 1999). In 2003 the global demonstrations against the War in Iraq, were also replicated in Spain with the *No a la guerra* movement, which used digital media to activate networks of people, as everywhere else (Bennett and Toft, 2008).

After the terrorist attacks on the 11th of March in 2004, only four days before the general elections in Spain, there were demonstrations all around the country and people called the demonstrations using sms's and the internet (Rheingold, 2004).

Seven years later, in 2011, the outbreak of the 15M had a huge impact on the development of the protest and the social organisation in Spain (Sampedro and Sánchez-Duarte, 2011). There was the will or common need in Spain to change the traditional political system and to transform decision making in a more participatory process. The internal organisation of the movement was defined per city, every city in Spain had a hub (Sampedro and Duarte, 2011), and within each hub small groups were created to address different issues (democracy, new energy models, internal policies, external policies...).

Those groups were efficient in making decisions, but also had some downsides, like the excessive time required in order to actually take decisions, the existence of some dominant voices that didn't always allow the flow of other people's opinions or the communication and agreement between the different hubs in the different cities. As we will see, many of the technological tools that have emerged since then try to solve these and other obstacles (Magallón, 2013).

In that sense, the 15M movement was a project hatcher in Spain. The need for solutions triggered the creation of different technological tools for internal and external use. The biggest challenge for them was to move and replicate face-to-face meetings that took place in the squares on the net.

Some tools that already existed experimented an intensive use by 15M participants, such as *N-1* (forums and sending messages), *Mumble* (live chat rooms), mailing services (*Riseup*, *Gandi*), wiki (at sindominio.net servers), Google tools (mailing groups and online documents, basically), *Wordpress*, and social networks such as *Twitter* and *Facebook*.

In this context specific spaces for campaigning and making public demands have been developed in many of the new digital media and in other platforms. These spaces are to some extend replacing the role of the media intermediation by bringing new issues to the public and therefore transforming autonomously the public agenda. In these processes, citizenry becomes co-creator of the information, promoting campaigns that later will become news, providing data as raw material for the information, sending pictures and audio and making complaint collaborative maps.

Nowadays in Spain, many other movements, communities and civil platforms are building and using these online applications and tools -usually open-source software- for their day to day work. They use public data and data produced or crowdsourced by users themselves as a way to increase the welfare of the community to which they belong and improve the administration's transparency.

During the protests in Spain there was a strong demand for transparency as *public data management* was crucial to understand how public policies work and then be able to propose changes. In Madrid the movement to protect public healthcare system fought for the disclosure of the report that endorsed the private management

of eight new public hospitals. In a same way in Castilla-La Mancha, a collective that defended the existence of rural school demanded the disclosure of the reports that endorsed the decision of closing circa 60 rural schools. In both cases the government claimed that those solutions were cheaper but denied to show the data (Anderica, 2017).

Cabo and Magallón (2013) define it as a way to make decisions based on the study of data. It is a way to evaluate the efficacy of public policies before their implantation, using techniques conferred on the scientific method. Data management has yielded good results in many countries and there are organisations that have dedicated part of their work to teach others how to make that data usage. The British Association mySociety is a pioneer in the development of what has been called *civic technology*, with and without using public data, which are solutions that help to increase citizen participation, the number and the quality of communication interactions between citizens and administrations, and the satisfaction of public services users. Projects that can be highlighted are *FixMyStreet*, *TheyWorkForYou*, *WhatDoTheyKnow* or *FixMyTransport* (Cabo and Magallón, 2013).

So far we have seen how the action of citizens has been incorporating new technological tools for their organisation and internal and external communication and has even started experimenting democratic participation and decision making experiences. The ongoing demand of access to the central public sphere (Papacharissi, 2008) is increasingly generating the development of tools that tend to be open source.

## Open data and civic technologies in Spain

As mentioned in the introduction, the aim of this research is to analyse the role of *open data policies* in Spain in the development of what we call civic technologies. In this sense, we will see how the open data movement is enabling the emergence of new applications that provide new content, resources and public information based solutions.

Moreover, as we shall see, in some cases these applications have cut the distances between the civil society and public institutions. Today some are being used as examples of successful collaboration in defining policies for citizen participation.

### *Civic technologies: Definition and typologies*

Nowadays, governments are still reluctant to put broad public participation mechanisms in place. Nevertheless, Internet and new digital languages have provided the peripheral public sphere with action tools and with a methodological base to participate and try to have an impact on the power centres (Iosifidis, 2011).

In the last years, mainly Spanish civil society organisations but also some public institutions and private companies, have launched different types of applications with the following objectives:

- Increase citizen knowledge about public affairs.
- Decrease social inequality.

- Provide new forms of social organisation.
- Offer new services to citizens or improve the existing public services.
- Generate tools for participation and citizen empowerment.
- Improve public accountability and transparency, and therefore, the democratic functioning of public institutions.
- Help to make more public data available and reduce the cost of doing it.

These technologies have generally three common characteristics: open source code, open licenses and promotion of civic outcomes.

Civic technologies propose solutions for the needs of the citizens which are varied: some try to solve communication issues by creating channels of communication between citizens and administrations, most of them analyse and explain a big amount of data or concrete issues and others are just new tools to improve the understanding of political systems and offer new opportunities for participation with the objective of integrating citizens and public institutions in a new deliberative process (Magallón, 2014).

In order to describe the different types of civic technologies we must take into account the objective of their actions (political, cultural or social) and the relations they establish among their communities.

The uprising of new social movements that use Internet as a tool and a medium, has triggered the creation of new platforms and applications that facilitate the interaction among many and seek to make something tangible and replicable from the collective intelligence. As we already mentioned, many of those tools aim to eliminate the different problems that emerge in deliberative and decision making processes.

These days we also find a series of civic technologies with a goal that can sometimes be diverse and mixed. In that sense, in Spain we find (Magallón, 2014):

- Technologies for transparency (*Tu derecho a saber*[4])
- Technologies to understand the functioning of the public institutions (*Qué hacen los diputados*[5])
- Technologies to enhance collaboration among institutions (*Aragón Open Data*[6] or *Openapps Euskadi*[7])
- Technologies for accountability (*Qué hacen los diputados*, *Quién Manda*[8], *Transparencia de las cuentas públicas*[9])
- Technologies to improve communication between citizens and public representatives (*Osoigo*[10] or *Oiga.me*[11])

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[4] It is a website that makes requesting information from any Spanish public institution easier. Once a question is answered, it is published directly on the website.

[5] It is a monitoring of the Spanish Parliament's activity website.

[6] It is an open data platform from the Aragon Government that has raw data but also applications and visualizations.

[7] It is an open software database for the administration.

[8] It is a project that tries to reflect the links and influence among politicians and economic and commercial agents to create a map of power in Spain.

[9] Project that uses public data to improve and increase awareness of the public accounts and provide a tool to improve its management.

[10] It is a website where citizens ask politicians about any issue and politicians reply.

[11] It is a tool to sign petitions, send mailing campaigns or send faxes to complain about anything.

- Technologies for journalistic investigation (*España en Llamas*[12] or *El Indultómetro*[13])
- Technologies for public participation in legislative processes (*Kuorum*[14])

Some of the above mentioned technologies have in common that they have been initially funded through the crowdfunding platform *Goteo*  which *The Guardian* newspaper described as being one the 10 most important social innovation initiatives internationally and the *European Civic Forum* declared to be the best non-profit organisation of 2014.

Civic technologies are generally orientated towards the improvement of citizens life and towards the generation of an added value through openness. When adding the use of public open data to the civic technologies, whether driven by civil society organisations, public institutions or private companies, we find a product focussed on public accountability, implication of citizens in decision making and which is able to initiate a dialogue with the public administration.

**The place and the role of open data in the definition of civic technologies**

The increasing social demand for an expansion of the public access to information has triggered the opening up and the integration within the open culture of many organisations and public institutions (Howe, 2006).

This process is suddenly offering citizens and specially the new media and the new generation of communicators and activists a new tool to develop their work of informing and reconstructing the reality, but also a new way to intervene in the public sphere.

In this sense, the publication of information can help the citizenry in becoming a relevant actor in the definition of the political agenda and furthermore participating in the implementation and evaluation of public action. For civil society organisations in Spain, it has become urgent that politicians and public institutions take the decision of releasing data. According to Bolaños (2013), transparency cannot happen without the implementation of the transparency law and in that sense the use of the data by the public and civil society is essential.

From this perspective, Rushkoff (2003) talks about an *open software democracy* in which citizens should: excavate in their legislative processes, achieve a rebirth of legislative processes in the new context of interconnected reality and assume that nothing is sacred and that everything should be questioned, reinterpreted and modified.

With the necessary information and under these conditions, citizens could not only read and understand legislative processes but also make suggestions and even draft laws. There is a relevant example with the Icelandic constitution that was redrafted by 25 citizens that were chosen after a selection process that was open to society. Although, at the end the draft constitution was never formally approved.

This is a model described by Rushkoff as bottom-up where the actors directly face the authorities and pretend to reinterpret and restructure the democratic, parliamentary and legislative processes. Technology enables

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[12] It is a website with data visualizations and articles about fires in Spain since 2001.
[13] It is a website with data visualizations, a search engine and articles about Spanish government pardons.
[14] It is a website where you can find legislative initiatives, vote on them and propose improvements than politicians can read and support.

people to access information that can't be found in the media, meaning now they can be part of the debate of how to change the status quo and collaborate to implement the changes with network technologies.

As mentioned above, among the technologies developed by the civil society we find a common characteristic: the use of open software and open code. As Rushkoff signalled, we find its precedents in the beginning of the 90's when the first examples of teledemocracy were launched, such as "former Clinton pollster Dick Morris's website www.vote.com, or even the somewhat effective political action site www.moveon.org, which were simply new versions of the public opinion poll" (Rushkoff, 2003).

Furthermore one of the main advantages of the outbreak of the *hacker culture* (Himanen, 2001) and the *network culture* was the chance to organize itself from any location, regardless of race, creed or ideology. Rushkoff calls attention to the open source software movement as a model to practise a networked democracy through an open and participatory legislative process. From this point of view, open data comes as a demand of the civil society that public institutions make available the information that they collect to all people, in open formats and which are freely reusable.

The term "open data" in Social Sciences was initially linked to the transparency of institutions. In its evolution it has developed new possibilities according to technological, cultural and social progress in the last 40 years. From this perspective, open data combines both senses of the word open, in its technological and philosophical meaning (Yu and Robinson, 2012: 8-11). It explains that the most recent access to information laws (also known as "transparency laws") include articles that make compulsory for public institutions to provide information in reusable formats.

Making public data reusable has positive effects on public management and in the private sector. At the same time, we are seeing how the civil society embraces civic technologies "to increase the chances of governance, promoting transparency and accountability that can potentially contribute to the fight against corruption" ( Ear-Dupuy and Serrat, 2014).

Somehow, the open data movement appeared in Spain as an alternative to the lack of response from public institutions to common problems of citizenry. In the last years we have seen that some civil organisations and companies have created applications and websites that use public information to explain and improve the work of institutions, such as *Repara Ciudad*[15] or *Proyecto Colibri*.[16] They are starting to take responsibility and replace the role of the State and the Public Administration creating solutions that make existing public services more accessible.

Thus, the importance of opening data is observed, not only for the civil society that develops technologies, but for the self-improvement of public services for citizens. Civic technologies need, apart from data collected by themselves, more open public data as raw material.


**The map of civic technologies in Spain**


As we have seen, the emergence of civic technologies in Spain has occurred during the last four years with special intensity between 2012 and 2014, just after the outbreak of the 15M movement. In Spain there are

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[15] It is a website where citizens can send complaints or send pictures about damages in the street or in public services.
[16] It is a project run by *Openkratio*, an association formed by developers, mainly, that created an open source API with data from the Spanish Parliament.

nowadays more than a hundred operational tools on the internet that make public information available and open channels of participation with the central public sphere.

*Discursia*[17] was one of the first civic projects in 2007 that tried to take institutional information from the Parliament to the citizens. It was a directory and ranking of Members of the Congress of Deputies in Spain that had a discreet impact. On the website, users could find out how many sessions each MP had attended and compare the attendance record of all the other members; information about their salaries; contacting MPs, and so on.

Moreover, with the creation of *Pro Bono Publico* -the first open data organisation in Spain- and their *Abredatos* Award[18], some open data projects were launched in Spain, such as *Parlio*, a website that tracked the politicians' work[19]. At the same time some other projects were launched aiming to decentralize social networks (*VirtualPol*, *N-1*) or to improve democracy (Catalonia's Parliament Widget, *Ágora Voting, Graba tu pleno*).

To carry out an analysis of the current scene of civic technologies in Spain we have considered:

- The websites and applications that continue online.
- Spanish institutions at local, regional and national level, civil organisations, private companies, private organisations such as political parties and individuals that achieve some of the objectives of civic technologies mentioned above and have the overall goal of improving transparency and democracy.
- The source of data that has been used to create the applications.
- If the tools created are open source and / or use free licenses.

In table number one we show the number of applications created which are ordered by year of creation. Starting in 2009, there has been a continuous growth with a peak of maximum growth in 2014. We have taken into account as individual items those mobile apps that have been built in different mobile operating systems (iOS, from Apple and Android from Google, mainly), because they might need native code development. Also, in some cases, app versions for every OS were not released at the same time.

**Table 1:** Number of civic technologies that are working nowadays and the year they were released.

| Date of launch | Number of civic tech tools |
|---|---|
| 2009 | 4 |
| 2010 | 3 |

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[17] See: http://archive.today/www.discursia.com

[18] *Abre Datos* award was the first open data award in Spain, they did two editions in 2010 and 2011. The challenge was to create a new application in 48 hours reusing public open data. Nowadays many public institutions have replicated this model. http://blog.probp.org/post/17031893664/ganadores-de-abredatos-2011 . Description of the 2010 event: http://blog.probp.org/post/17031733896/en-marcha-desafio-abredatos-2010

[19] See: http://blog.probp.org/post/17031648110/parlio-la-politica-que-se-entiende

| | |
|---|---|
| 2011 | 10 |
| 2012 | 23 |
| 2013 | 24 |
| 2014 | 43 |
| 2015 (until march) | 5 |

From all the applications analysed, 90.1% have used data from public institutions but only 22.3% of those projects managed to find the data in an open format, the rest had to use different techniques such as scraping or copying data from non-scrapable PDF documents, for instance.

28.5% of the projects analysed used information from private entities to use their tools, but only 3.5% of these (four applications) managed to find the data in reusable formats. It is also interesting that 57.1% of the applications work with data produced by its own, either because users introduce information in the application or because they generate new data from public or private sources.

**Table 2:** Source of data used by civic technologies.

| Source | Number of civic tech tools |
|---|---|
| Uses open data from public institutions | 25 |
| Uses data from public institutions | 73 |
| Uses open data from private organisations | 4 |
| Uses data from private organisations | 32 |
| Generates own data | 64 |

With regard to the possibility of a sharing code, 40.1% of organisations offer this feature through an API. Civil society organisations and the administration are the most given to open the code while only 8 private companies out of 31 that have developed civic technologies providing an API. The possibility of replicating content under a free license is given by 46.4% of the applications and only 30.3% combine open source codes with free licensed content, as shown in table number three.

**Table 3:** Number of civic technologies that has an intellectual property content free license; are open source and which combine both features.

| Source of data/license | Number of civic tech tools |
|---|---|
| Free license | 52 |
| Open source | 45 |
| Open source and free license | 34 |

Another element that has been analysed is the territorial scope of these civic technologies. We have found that most of the projects target Spanish users, either because of the content or the issues the applications are devoted to (tools for reporting breakdowns or incidents on public roads) or because of the subject or target (national legislation and policies, for instance).

Thus, 64.2% of projects are oriented to domestic use; 11.6% to regional use; 14.2% to a local use and only 9.8% have an international scope.

**Table 4:** Territorial scope of civic technologies.

| Level | Number of civic tech tools |
|---|---|
| Local | 16 |
| Regional | 13 |
| National | 72 |
| International | 11 |

For the elaboration of the mapping of civic technologies we have taken into account the capacity of organisations to develop their own tools. In 83.9% of the projects analysed, the organisation promoting the application was also the developer, more specifically, a civil society organisation (in 33.9% of the cases), a private company (in 27.6% of the cases), a public institution (in 17.8% of the cases) and a private organisation (in 1.7% of the cases, in this case two political parties). Some of the private companies that generated a civic technology can be classified as social enterprises[20].

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[20] Social enterprises are pioneering new ways of doing governance work and creating public value, their future sustainability, and their potential for enriching democracy.

In 13.3% of the cases a public institution or a civil society organisation has externalised the production of its application and a company has developed it. In two cases (1,7%), the civil organisation Fundación Ciudadana Civio has helped in the development and visualizing of a city hall and a regional government budget.

Only in 2.6% of the cases it was an individual person who developed the initiative and one case (0.8%) needed help from a civil organisation.

**Table 5:** Organisation that promoted the tool.

| Organisation type | Number of organisations |
| --- | --- |
| Civil organisation | 38 |
| Civil organisation/Company | 4 |
| Company | 31 |
| Individual | 3 |
| Individual/Civil organisation | 1 |
| Private organisation | 2 |
| Public institution | 20 |
| Public institution/Company | 11 |
| Public institution/Civil organisation | 2 |

Among the civil society organisations that have developed more projects we find *Fundación Ciudadana Civio*, that has created *tuderechoasaber.es* (with *Access Info Europe*), *España en llamas*, *El Indultómetro* or *Quién Manda*, a project that tries to reflect the links and influence among politicians, senior State, economic and commercial agents, and so on to create a map of power in Spain.

Alongside them we find several projects focused on improving the political knowledge of citizens, the work of public representatives or enhance participation in politics. It is the case of *Qué hacen los diputados* (What MPs do) -born in 2011- which has an open source application which is used to track, visualize and oversee the MPs work; *Sueldos Públicos*, born in March 2012, reports about the salaries of local, regional, national and European Spanish politicians; *Graba tu pleno* is a platform which defends the citizen's right to videotape plenary sessions at every city hall (in April 2012 they already had 1,200 team members) or *Incoma*, that proposes a virtual square in which debates open to participation are displayed.

Among the technologies developed by the public administrations we observe that most small administrations have mobile application programs for citizens to report incidents about public roads or services. Especially

relevant is the case of the city of Zaragoza, which has created online applications from their data sets to display municipal budgets, tendering companies or grants of public money, with open and linked [21]data.

While governments like those of Aragon and the Basque Country have also followed this trend, developing apps to bring public information to the public (budgets, information about the municipalities, legislative initiatives, etc.), the Spanish central Government has created different tools whose data are closed and do not offer an API to reuse their code, for example the new transparency website[22].

Among the private initiatives, a couple of projects stand out. *Smart Citizen-Sensores Ciudadanos* (Citizen Sensors-Smart Sensors from Fab Lab Barcelona) want to generate participatory processes for people in cities; with their technology they link people, knowledge and data and the aim of the platform is to serve as a production hub to generate open and distribution indicators. Also, tools as *Appgree* or *Ágora Voting* are open and safe systems that allow online voting.

During the last few years we have observed the emergence of more civil society organisations in favour of transparency, open data and accountability as also the approval of the Spanish transparency law, which was passed in Parliament in December 2013 after many years of campaigning by the civil society, and the approval of many regional and local transparency laws.

As we have seen there have been some attempts by public institutions to create technological services for citizens with and without computer skills. We also have detected efforts from private companies to develop tools to manage and improve the participation of public institutions. The map that we have drawn shows that the use of open data, of free licenses and open codes are not yet widely extended and would need further evolution in the country.


**Conclusions. Lines of action towards social transformation**


Among the characteristics of the civic technologies analysed, we find that:


1.      They improve the public's knowledge about the political system.
2.      They provide the public with arguments to demand a better functioning of the political system.
3.      They aim to include citizens in the decision making process.
4.      They enable communication and interaction with public representatives.
5.      They are generally associated, directly or indirectly, with the open data movement, hacker culture and the new forms of network communities.
6.      They offer the possibility of replicating the new tools at any geographical level.
7.      They can help journalists and citizens analysing public accountability processes.
8.      They can be created by any actor: individuals, civil society or public or private institutions. Sometimes they are set up by public institutions and they improve public services with the collaboration of citizens.

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[21] Linked data is a set of best practices for publishing and connecting structured data on the Web.
[22] http://transparencia.gob.es/

Knowledge is drawn as the only possible intermediary between a citizenry, that seeks to be autonomous and independent, and public institutions. Civil society has built a model of social agenda that aims to deepen democratic mechanisms and believes that transparency must be one of the principles that should set this new *social contract.*

From this point of view, transparency of the public issues is configured as a threefold process:

- The reasons of political / public decisions.
- The process of decision making.
- The results generated by those decisions.

Otherwise, the role of civic technologies is becoming a tool -and sometimes a basis- for critical action to assess the limits of technology in developing a democracy.

The results of this research reveal that the public administration has difficulties understanding and adapting to the demands of the organisations that reuse their data. As we have seen the opening of public open data portals has still to be improved in Spain, the private sector and the civil society keep demanding more data related to democratic, economic, cultural and social development. The situation of open data within the private sector is not better, only very few applications have used private open data portals to develop their projects.

In any case, the difficulties and challenges that the developers come across are marking the way to go for public authorities, social organisations and the private sector:

- Insufficient transparency laws and lack of political will: despite the fact that the Spanish transparency law has just been approved, the pro transparency organisations and other collectives interested in this issue consider that they have to be persistent dealing with governments and institutions to establish processes for making decisions open and accessible.
- It seems necessary to establish a roadmap for releasing data that become useful to the economy and society: the administration should incorporate technical profiles to work with people versed in open data or, where appropriate, with specialized organisations to delimit better data releasing, formats and, ultimately, optimize the process.
- Lack of economic development in the field of open data: civic technologies can generate a *new collaborative economy*. Their appearance has to be understood as an alternative to an administration that does not fully understand the democratic, political and social model being developed and that very few administrations have begun to assume.
- Data activism has to be considered as an emerging phenomenon in the context of an open data movement: Its relationship with data journalism can finish setting up new systems of relations between journalism and activism.

In conclusion, we can affirm that the development of civic technologies and the emergence of digital media have inaugurated a new level of relation between the actors of the public sphere. Communication between governors and governed can be more effective if we redefine traditional intermediaries. The most immediate

consequence would be an improvement in terms of democratic control and the inclusion of citizenry in deliberation and decision processes. The proactive work of public institutions will define the development of projects based on open data, data activism and civic technologies over the coming years.

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