

E-Government, e-Governance and Urban Planning: Towards a Complete Digital Planning Process

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Abstract. Urban planning is changing in all its issues, especially with regard to transparency and citizen participation. The purpose of this paper is to provide a complete view of the planning process explaining the project implemented by Aragon's Government with the ultimate aim of digital switchover of all the stages. The project starts by ensuring urban information access through the use of web-based technology and Geographic Information Systems with a preliminary standardization work, continues with the development of an electronic processing system for urban planning instruments and finishes with the implementation of a new tool that will encourage citizen participation from the beginning of the process. The platform will allow the speed up of these procedures, facilitate the task of municipalities and achieve a greater coordination between administrations and also, as a transparency instrument, should enable the citizen to take an active part in the relationship with public administrations, in other words being involved in the decision-making process.

Keywords: Urban planning · Information access · Electronic processing · Participation · Web-based tools

1 Introduction

E-government and innovation can provide significant opportunities to transform public administration into an instrument of sustainable development. The UN Public Administration Program defines e-government as the use of ICT and its application by governments for the provision of information and public services to citizens and organizations (UNPAN 2014). Through innovation and e-government, public administrations can be more efficient, provide better services and respond to demands for transparency and accountability. Technologies can be used to manage data and information and enhance communication channels for engagement and empowerment of people.

Many authors focus on the potential of electronic government exploring different aspects contributing to citizens' participation and purposes of governance such as customer orientation (Schedler and Summermatter 2007), usability, functionality, security computer resource requirement, technical support provision (Hamilton et al. 2011; Venkatesh et al. 2012; Roman 2015). There is also a growing body of literature and research about the concept of e-Participation (Sandorf and Rose 2007; Sæbø et al.

2008; Medaglia 2012; Susha and Grönlund 2012) that confirms the interdisciplinarity of the field and refers to the use of ICT to support democratic decision-making. However, the potential of a digital state cannot be realized unless the rigid structures of contemporary bureaucratic state change along with the times in order to assimilate the integration of technology into government (Fountain 2001) and new procedures and activities have to be designed (Sanford and Rose 2008).

In recent years, cities are experiencing continual growth, and the challenge is to understand how we can use digital technologies and online resources to design livable cities and to engage citizens in urban planning. New digital tools and applications are developed to provide large quantities of data to better understand the reality of cities and visualization methods are increasing with varying degrees of technical complexity as communicate planning ideas is essential in participatory design (Al-Kodmany 2001). Also virtual reality environments are explored to help users interpret urban designs with new visualization options (Foth et al. 2009).

Urban planning and the methods for citizen participation in urban issues are also changing (Innes and Booher 2010) as digital tools invite people to experience urban space in new ways. Furthermore, there is an increasing effort to involve citizens from the beginning of the planning process and specific tools, such as Geographic Information Systems (GIS)-based services (Elwood 2001; Snellen 2001) and web-based technologies (Evans-Cowley and Hollander 2010; Ertiö 2015) play an important part in this challenge. But GIS could be difficult to use for citizens and user-friendlier tools such as Bottom-up GIS and map-based web applications, which enable citizens to create data on a map, have been developed (Talen 2000; Nuojuua 2010; Adams 2013). In that sense, participatory planning becomes e-planning when participatory activities are expanded beyond face-to-face interaction to include ICT-mediated interaction.

The potential for e-government to enhance citizen participation makes it an enticing tool for planners and planning-related government entities (Conroy and Evans-Cowley 2006). E-planning, especially participatory e-planning, can be an important instrument of both e-democracy and e-governance (Conroy and Evans-Cowley 2004) although electronic tools has to be fit better into their context (Kubicek 2010) and digital methodologies have to be developed for widening public participation (Curwell et al. 2005). Some countries are taking advantage of the possibilities of e-planning to help the planning system deliver more efficient and accessible information and services (Horelli and Wallin 2010).

In Spain, Public Administrations are introducing important changes to improve the quality of services delivery bringing public issues closer to the citizen. That is also extended to urban planning, regional and local governments continue their efforts to promote the use of information and communication technologies, trying to simplify procedures, enhance transparency and strengthen citizen involvement. In order to achieve these goals, they have developed new instruments; both regulatory and ICT tools.

The Autonomous Community of Aragon has been developing for the past six years a complex and thorough project trying to achieve the *digital planning process*, starting with information access in order to ensure citizens access to urban planning information on a website. Thereafter, the project continues developing a platform as a transparency instrument, which also makes the electronic processing of urban planning possible. It will finish with the implementation of a new web-based tool that will

encourage citizen participation from the beginning of the process. This approach tries to provide the necessary means to facilitate the work of municipalities, coordinate all different administrations and sectoral agencies that are involved in the planning process and improve services for citizens, not only to assist technicians but also to bring urban planning closer to citizens, in other words, providing information in a manner accessible for a non-specialist public.

This paper explains the project according to the different parts and stages of development. Part I analyses the necessary standardization process executed to achieve urban planning information gathering and dissemination. Part II refers to the electronic processing system, explaining the features and functionalities of the different IT tools designed and how it fits into the local authorities system since they are involved in urban planning procedure. Part III focus on e-governance advancing the upcoming developments aimed at developing an innovative web-based computer application to further improve urban planning participation.

2 Urban Planning Standardization Process and the Urban Information System

The region of Aragon has a large surface of 47.719 km², almost 10% of the extension of the Spanish territory, yet, its population, 1.346.293 inhabitants, supposes only 2,84% of the Spanish population. It has one of the lowest densities of Europe: 28,21 inhabitants/km², and several areas only have 3 inhabitants/km², so depopulation is one of the biggest problems here, especially in rural areas. The administrative structure consists of three provinces and 731 municipalities, but only 20 have more than 5,000 inhabitants, whereas 526 have less than 500 inhabitants.

The number and characteristics of the municipalities are decisive to define the type and degree of detail in urban planning information that could be gathered, since although there is a common regulation for all of them, the particular needs have led to the existence and development of several urban planning instruments (General Plans, Simplified Plans and Urban Land Restrictions) which have different level of detail and determinations. This, together with the distributions of competences among the regional government and local authorities, determine the type and level of urban information that regional administration can provide.

2.1 Urban Information Principles

One of the main objectives of e-Participation is to provide relevant information in an accessible and understandable way to the audience in order to enable more informed contributions (Macintosh 2004). In order to ensure urban planning information, the objectives and priorities were defined as follows:

- a. Information shall be freely available on the Internet. Citizens may consult all the urban information of the region on a website: common access point (Urban System Information of Aragon, <http://sitar.aragon.es/SIUa/>).

- b. Information has to be up to date and understandable. The existing planning instruments in each municipality, as well as their dates of approval and deadlines for entry into force, have to be shown the day after its publication.
- c. Information should have legal certainty. Urban planning determinations have an important legal and economic impact so that documents available on the website must be related to the final ones, signed and stamped by the competent secretary. Citizens should be able to verify that documents correspond to originals (They must have digital signature and diligence).
- d. Information has to be homogeneous. In order to ease of understanding urban planning documents by the citizen, a common language and criteria for the drafting and final presentation is needed.
- e. The required information may not vary in level of detail from municipalities in order to provide a complete urban planning map.

2.2 The NOTEPA Project

To achieve the principle of simplification concerning urban planning activity, the Urban Planning Law of Aragon (2009) establishes the need to develop an Urban Planning Technical Rule (NOTEPA). This rule was approved in 2011 and serves the purpose of standardizing the urban planning instruments in order to facilitate and streamline their implementation and knowledge so it is set to become in the technical framework that simplifies the urban planning system in Aragon. Moreover, this technical rule is necessary to standardize criteria for the development of the urban planning documents, in other words, normalize the cartography, specific terminology and general urban concepts with the aim of reducing the degree of discretion in its interpretation and facilitating its integration into the Urban Information Systems, both regional and national. In that sense, the rule lays down the foundation for a common code ensuring that it does not reduce the initiative and creativity of the drafting teams.

We should focus on the role of the rule that has to contribute to the objective of urban planning information gathering and dissemination. That will be extended to all stages of the plans implementation, to all stakeholders involved in their processing and to all citizens as ultimate beneficiaries of urban activity. To that end, with the aim of homogenize and make easier the drafting of urban plans, the Urban Planning Department has undertaken the project called *NOTEPA*, in order to provide common criteria and the IT tools able to bring closer the contents and documents prepared by the technicians. The main objectives of the project are:

- To homogenize urban planning documentation.
- To provide greater legal certainty.
- To facilitate urban planning gathering and dissemination.
- To create a common code whilst preserving the creativity of the drafting teams.
- To provide a free software tool for the technicians.
- To make easier the understanding of technical urban planning documents.

This project is a major step forward towards the gathering and dissemination of urban planning information by further structuring and clarifying the urban planning documents. This ambitious project facilitates liaison and unification with the Urban Information System of Aragon where all the urban information about all the municipalities will be shown. It is made up of two parts: a Technical Rule, which is the heart of the project, and two software applications designed to help ensure compliance.

Urban Planning Technical Rule. This Rule constitutes the major part of NOTEPA's Project around which a set of tools is developed trying to get the maximum performance of urban planning homogeneity.

Before drafting the policy document, an exhaustive analysis about the situation and characteristics of urban planning in Aragon was done. General Urban Plans of representative municipalities were studied in order to draw the scheme of contents, required determinations, graphical models, etc. The conclusions of that study were reflected in an assessment that set out the need to define some criteria to clarify the information, both written and graphic, which any urban plan contains. In spite of the great diversity of cases and urban issue, there are some parameters that could be followed such as identification tags, color use in plots and shading, data sheets, layer structure or the list of contents that should enhance the quality of urban planning.

With all that information a draft of the policy document was prepared and in the hearing period sectoral agencies such as the different regional departments, the Environmental Agency, the Economic and Social Council, the Federation of Municipalities, the Urban Planning Regional Councils, the Official Schools of Architects, Engineers and Geographers made suggestions that were taken into account in the final version of the Rule. At the same time, the draft decree was published in the Official Gazette in order to offer citizens a two-month period to submit comments and requests.

The Urban Planning Technical Rule has the specifications and minimum characteristics that urban planning documents must have in Aragon. The main purpose of this rule is to define the quality, legality and standardization requirements that urban planning documentation must fulfill in order to integrate the structured information in the Spatial Data Infrastructure of Aragon at the conclusion of the administrative handling. To that effect, it contains:

- Definitions of the common concepts used in the area of urban planning, as well as abbreviations and acronyms for each of them.
- The type of cartography and reference scales that should be used as a basis for graphic documents.
- The guidelines and minimum requirements for the submission of documentation for each instrument.

Software Applications. NOTEPCAD is a free computer application developed by the Urban Planning Department that helps fulfilling the technical rule and makes easier the urban planning drafting. This specific software is a customization of the most widely used drawing application in Aragon, AutoCAD, and its installation process adds several toolbars to existing ones. With this method the technical author can continue drawing as usual, executing AutoCAD commands, and also translates information into urban planning concepts through specific graphic windows.

Using this application allows automatic metadata management, brings structure to information in different files, facilitates information being geo-referenced, increases the readability of graphical documents with shading, labels and layers automatic handle; involves a methodology which helps drafting teams and provides a real-time overview of the important numbers of urban planning, that is, zoning and surfaces.

In addition to NOTEPACAD, another software application known and hereinafter-called *L3* has been developed. It automates the urban data upload in the single data model from the files delivered by the technical authors (dwg, dxf and gml together with Excel sheets data) to the maximum extent possible.

To do this, depending on the file delivered, the user selects a gml file standardized from NOTEPACAD or one or more CAD files. If the process is done from the dwg files, as the technical author has respected and followed the layers structure, the application *L3* can make a logical allocation of geometries. The input data are transformed into a vectorial format based on ESRI features in order to allow its visualization and management (shp file) and urban planning data are then added. That data are entered in two different ways: (i) Through Excel sheets and tables: General data can be entered at the time of the file upload and later it is possible to assign the specific data of each sector loading the tables. (ii) In a manual way: Geometry data could be modified at any time, either to introduce the missing data or to rectify any accuracy.

The tool allows the user to select the SDE environment to connect in order to get the data of the municipalities and update the layers of the model. Once the topologies are revised and the errors detected are corrected, a back-up copy is done and the tool makes the migration process of the new geometries to the appropriate database. This data base could be ArcSDE which has operated until now or PostGres - PostGIS which is scheduled to begin working in April 2017 when the corporate infrastructure change of IDEARAGON is completed. It also allows to save the transformation result of the drawing file both in dwg and shp formats and to generate the metadata file according to NOTEPA requirements.

2.3 Files Management Data Base

With the aim of storage all the documentation in a structured way and could search and retrieve any of the documents forming part of the urban planning file, a computer data base SAU BDD was created as well as two applications SAU-URBAN and SAU-GISWS. This database is the structural component that contains all the urban planning administrative records and links with the different applications and websites.

In the first place, SAU-URBAN is a desktop application of the Urban Planning Department, based on Power Builder technology, which allows the urban planning files management. It enables the creation and development of different types of documents with several templates and also to attach files, drafted in advance, both in word and pdf format. The processed files are stored in *Documentum*, the document manager of Aragon's Government, from where they are checked and recover thereafter. In the second place, SAUGISWS is a web-based application developed with J2EE technology which publishes different web services to meaningfully integrate with other applications indicated below: SIUA, PUA and DDPW (Fig. 1).

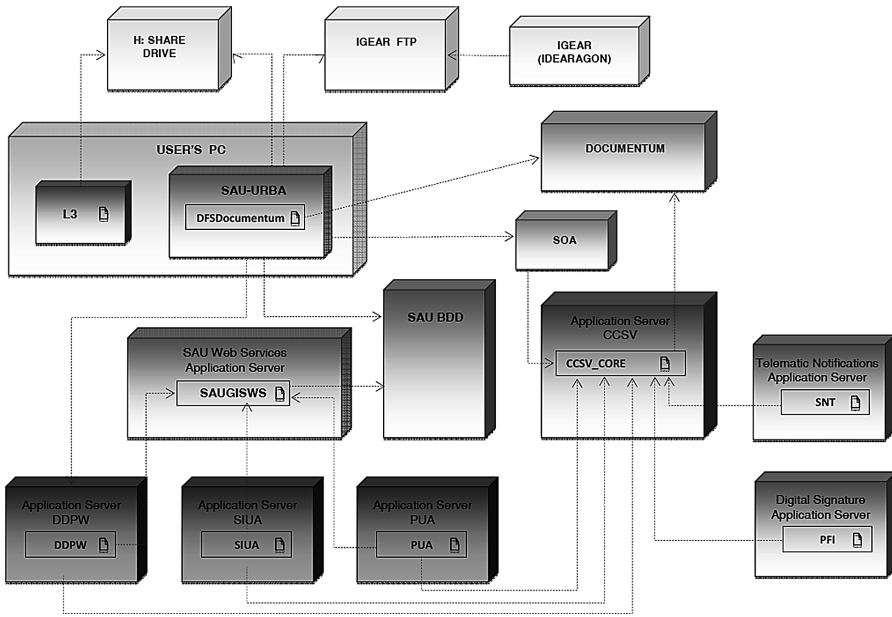


Fig. 1. Systems involved in urban planning process and management.

Therefore, the urban planning file data base, SAU BDD, can be accessed by both applications and it contains the tables and views filling by the application SAU-URBAN and after consulting by SAUGIS through its web services. Thus, all the approval agreements of urban planning instruments and the technical documents making up the files (memories, plans, regulations, data sheets, etc.) are stored in the data base and at the same time are shown for citizen consultation in two different web pages. If they are currently being processed, they will appear in the Urban Platform website (PUA) and if they are finally approved they will be available in the Urban Information System website (SIUA).

Moreover, the latest technological developments have been able to integrate SAU-URBAN application with the e-government services so that generated documents could be electronically signed through the Digital Signature Service of Aragon's Government, *Portafirmas*. At present, work is already under way to integrate with the Telematic Notifications Service in order to allow submitting notifications to citizens and local authorities through the application.

2.4 The Urban Information System

The Urban Information System of Aragon (SIUA) is a set of tools developed for the publication and dissemination of urban planning data and existing information in the Autonomous Community of Aragon. It has two main tools, the archive and the viewer, continuously updated and is a collaborative system that is co-ordinated with other information systems:

- National Urban Information System (SIU).
- Real Estate Cadastre.
- Spatial Data Infrastructure of Aragon (IDEARAGON).

Archive. The urban planning file ensures the telematic access to all information gathered about the urban planning instruments of Aragon municipalities. The information is organized by municipalities and enables citizens to acquaint themselves with the general and development urban planning instruments as well as their modifications. They could also consult and download the specific documents of each instrument, which have been previously scanned and classified for its diffusion through the use of web-based technology.

The archive is updated by scanning the documentation that has been finally approved. In this regard, the implementation of the Urban Planning Technical Rule is entirely related with the effective working and continued development of the archive, as it will provide a better understanding and dissemination of all urban planning information by setting common standards and instructions for drawing-up and submitting documentation in digital form. This update will be automatic and documents could be shown from the moment of its approval from the implementation and complete application of the Urban Planning Digital Diligence tool (DDPW), explained in point 3.2. This tool is already developed and tested and enables the digital signature and stamp of the technical documents and its sending through telematic means.

Viewer. The urban planning viewer is a geographic information visualization tool which makes accessible the urban planning information directly on the map and, moreover, it provide specific information and data related to current urban planning instruments such us land classification, types of land use, infrastructures and equipments, general urban data sheets, etc. A key feature of this tool is that it allows the user to overlay other geographic information layers which have a bearing in urban planning such us environmental and sectoral protections, transport infrastructures or land register. The viewer is updated annually after the vectorization and systematization process on the basis of the scanned documents. But, after the development and launch of the proposal preparation tool L3, it will be possible its automatic update from the files handed by the drafting teams, speeding up the process and avoiding manual works.

As mentioned above, the viewer is integrated with the Spatial Data Infrastructure of Aragon (IDEARAGON). This infrastructure is based on client/server architecture model using the OGC and ISO standards. The model allows the processing and answer of the client requests made via websites or specific softwares by means of transfer and communication languages that are standardized and interoperable. Interoperability enables data sharing and the possibility of information and knowledge exchange between different information systems that provides geographic information from many sources on the Internet. It consists of a set of servers able to manage the geographic information fully and properly from creation to publication enabling its control, register, organization, documentation, storage and later search and use by citizens. All these actions are achieved through different applications, services and data bases.

3 Electronic Processing System

Once the urban planning information improvement process has been completed, the second stage of the project starts. The main objective of this stage is to implement an electronic processing system of urban planning instruments that will allow the speed up of these procedures, facilitate the task of municipalities and achieve a greater coordination between administrations.

In view of the distribution of the population in Aragon, where more than eighty per cent of municipalities have less than 1.000 inhabitants, the technical resources necessary for providing electronic processing services concerning urban planning are beyond the reach of local authorities. But information society is evolving continuously; citizens and businesses demand greater access and quality of services and Public Administrations have to face the new requirements through effective delivery of services. Moreover, the Electronic Access to Public Services Act establishes certain obligations that all public administrations must meet.

3.1 Urban Platform of Aragon

In order to make this happen, the Urban Planning Department has developed the Urban Platform of Aragon (PUA). It may be reinforced as a central service that incorporate the new technologies into all urban planning procedures, provide a web environment for the public reporting period and submission of reports, enable sending complete files and urban projects through telematic networks to the Provincial Council for their approval or report and promote a greater publicity of the urban planning instruments. In the end, this will encourage a more efficient public participation process and streamline procedures. The platform has three different modules that correspond to the user roles that could use this service in any stage of processing: municipal secretaries, sectoral agencies and citizens.

In the first place, municipal secretary's module includes several features which allow them to take the following actions: (i) sending the approval agreements to Aragon's official journal (BOA); (ii) requesting sectoral reports to all the sectoral agencies which have competences due to the specific conditions of the urban planning instrument as well as receive and download the content of the reports; (iii) receiving requests from citizens during the public reporting period and reply to those requests through the electronic notifications service.

In the second place, sectoral agencies' module allows the reception of requesting reports with link to the documentation of the urban planning instrument so that they can consult and download it on the website of PUA viewer. After that they can upload the report digitally signed or sign it with the application and finally send it through the platform. In that sense, it should be emphasized that due to the high number of agencies involved in urban planning, the collaboration between them is essential so that procedures could be speed up and improved by means of telematic services.

In the third place, citizens' module enables the dispatch of allegations during the public reporting period, after the initial approval of the instrument. To that end, the citizen can check all the documents, both written (memories, regulations, catalogues,

annexes, etc.) and graphic (information and planning) in the viewer. The essential requirement is that the documentation must have the digital diligence so that citizens are assured of the validity of the documents. Therefore, PUA allows citizens to make representations to an urban planning instrument in the public reporting period that has been previously upload in the database and is shown through the viewer of the platform. For this, it is only necessary to have the electronic ID or another recognized certificate to access and then fill out the attached form.

The platform allows municipalities for sectoral reports request and sectoral agencies for referral the reports to the relevant municipality. To that end, e-government services enabling sending and receiving the notifications and documentation with the necessary legal security have been implemented. The application is completely integrated with the e-Government Aragon's Plan services:

- SRT: Telematic Register Service
- SNT: Telematic Notifications Service
- SIU: Users Identification Service
- SGA: Alert Management Service
- IBOA: Aragon's Official Gazette Application
- CCSV: Web-based application of the e-government service that integrates with the document manager, Documentum, providing web services.

But apart from e-government services, owing to the inter-administrative nature of the application, PUA is also integrated with the Documents Referral Service (SRD). This is a telematic service dedicated to the exchange of documents between the Local Administration Department of Aragon and the local authorities, which was launched in 2008. Through this service, local authorities send documentation relating to agreements, meeting records, resolutions and ordinances, budgets, tax regulations, inventories as well as the initiation agreements of proceedings that after will be deal with by the autonomous community. Until now, these documents were sent on paper by post, but since the introduction of SRD it has been replaced by electronic means with digital signature. Now, SRD includes two new links, one to the Urban Planning Digital Diligence (DDPW) and another one to the Urban Planning Platform (ETTPUA).

3.2 Urban Planning Digital Diligence

As previously mentioned, a fundamental requirement for launching the project is the digital diligence of the urban planning instruments. To date, after the approval agreement, the secretary in charge, depending on the type of instrument and stage of processing will be the secretary of the Town Council or the Provincial Council, executes the diligence act on paper documents, in other words, place their stamp with the date and signature. These documents are subsequently scanned in order to be accessible on the web of the Urban Information System but in order to achieve the telematic process, specially the public reporting period and consultations, there was a need to replace this stamp and signature with the corresponding digital.

To that end, the Urban Planning Department developed the Urban Planning Digital Diligence (DDPW), a web-based application that makes possible the digital diligence

and it allows to attach the other administrative documentation (as certified copies) and to send them through telematic network to Documentum. After receiving all the documents telematically, SAUGIS' web services incorporate the documents to the data base SAU BDD and show them in PUA and SIUA websites.

The web application has been developed with the programme platform J2EE with JAVA programming language. The components of the architecture are data base Oracle 10 g and applications server Oracle Weblogic Server 12c (12.2.1). DDPW, like PUA, is integrated with SRD, which handle the Town Council Secretaries management, and with the Telematic Register Server that ensures the entry and reception of electronic documents. Therefore, the application is integrated with the following horizontal services of Aragon's Government:

- Document manager server: Documentum.
- CCSV: Web-based application of the e-government service that integrates with the document manager, Document, providing web services.
- SRT: Telematic Register Service.
- Signature Platform: @firma.

4 Participation: e-Government and e-Governance

In addition to fulfilling electronically the obligations on information and hearing procedures, the Urban Planning Department wants to encourage the addition of proposals or suggestions by citizens in the early stages of the urban planning instruments drafting. To do this, starting from the assessments of alternatives executed last year, the aim is to develop an innovative web-based computer application to further improve urban planning integrating new technologies, spatial analysis and citizen participation. The new tool shall be accessible from the Urban Platform of Aragon and may be integrated with the web portal Aragon Participates, a website developed by the Citizen Participation, Transparency and Cooperation Department to create greater involvement of citizens in the design and evaluation of public policies.

It will provide the possibility of designing and executing a participatory process during the drafting of an urban planning instrument to any municipality. During the study, different participation processes, both national and international, were analyzed in order to find the better option of a tool that can be applied in any municipality of Aragon. Due to the great diversity of urban areas and necessities, the key is that the application has to be scalable and flexible so that it can be used from a general urban plan for the whole city or town to an urban regeneration plan for a neighborhood. The chosen system is based on a number of guided-surveys developed and tested by the drafting team, which will be empowered in advance. A selection of questions, which could be used and amended, will be available for the technicians and could combine alphanumeric questions with "geographic" ones. In geographic questions, the framework, reference layers as well as the type of questions must be selected so that the citizen could choose geographical entities previously upload or draw freely points, lines or polygons.

Using geo-referenced questions will enable citizens to establish their needs and suggestions specifically and precisely on the map, for instance pedestrians' routes, dangerous sites, congestion problems, degraded areas, buildings need of retrofitting, green areas, equipments... Moreover, when the survey is completed, GIS allow detailed analyses, operation processing, visual representation and in-depth knowledge of the city situation identifying the critical areas and essential needs for inhabitants with.

Regarding the technical requirements, all external cartographic sources has to be included in the application according to Spatial Data Infrastructures. This means that they will be consulted through Web Map Services (WMS) that meet the standard OGC and be supplied by official bodies. All system information, both alphanumeric and geographical, should be stored in a database (Oracle 11g) that will have storage capacity of geographical objects.

5 Conclusions

In recent years, Public Administrations have been modernizing their services and, as a result of the possibilities of new technologies and digital media, new forms of relationship with citizens emerge. This includes not only enhancing proceedings' transparency and dissemination of information with several web pages but also platforms for user interaction and better coordination between different authorities.

Urban Planning Department of Aragon promotes the effective use of ICT in order to allow a greater spread and access to urban information, an increased transparency in planning process and citizens' participation. This includes moving towards an electronic processing system for urban planning instruments, but urban planning procedure is really complex due to the number of administrations and stakeholders involved in it, the several stages that have to be completed and the legal requirements that should be complied. Consequently new tools have been developed in order to facilitate the task of administrations and to make the entire decision-making process more transparent, from the preparatory stage to the final approval.

A database is the heart of the project which storages and manages all the urban planning data and documents through several web services that integrate with the other applications and services. The final result is the availability of reliable information in different websites for citizens' access to consult, use and download, including geographical viewers where visualization tools help to understand and analyze urban information and phenomena.

This project represented a costly technical challenge that has been gradually completed with the development and implementation of several computer tools that allow the execution of all the processes in digital form. But the key for the success of this initiative is the collaboration and participation of different administrations, sectoral agencies and also citizens at each stage of the process.

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