

D.T.2.2.4
DEPLOYMENT OF A
WEB-GIS PLATFORM
FOR THE INTEGRATED
MONITORING OF
CHANGES AND
MODIFICATIONS IN A
HBA

04. 2018

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I. INTRODUCTION

HISTORIC BUILT AREAS' GOVERNANCE

Historic Built Areas' governance is a complex and dynamic mechanism. There are a lot of topics to afford, a lot of thematic analysis to examine, phenomena evolve over time and the decisions taken have numerous effects and impacts.

A methodology that can help to face the issue is Overlay mapping. Overlay mapping has been in GIS (Geographic Information System) systems since they were born¹.

Mc Harg's original application was a manual technique but it allows understanding how it is possible to put together a lot of topics and how the analysis can be the basis for the management of an area.

This is not enough for an effective ICT tool on HBAs. At present, GIS systems are still too technical so they are difficult to use as the basis for the confrontation between different departments, bodies and persons from the public and the private sectors.

B.h.EN.E.F.I.T. rises the challenge of overtake this limit and tests an user friendly GIS interface to understand if GIS maps can became the basis for knowledge sharing and public debate on HBAs.

B.h.EN.E.F.I.T. is also attentive to the latest developments of GIS systems that include formula where the community can became an active participant (crowdsourcing solutions).

¹ The fist GIS commercial software, ODYSSEY, produced in the Seventies, already contained Ian L. Mc Harg's Overlay mapping concept.

I.I. OVERLAY MAPPING

In the sixties, the landscape architect Ian L. Mc Harg was studying how to design new roadway damaging as less as possible natural heritage and biodiversity. To do that, he developed an eligibility analysis through a technique he called “overlay mapping”. The technique consists of the overlapping of different thematic maps.

The first step is to identify the values (historical, hydrogeological, panoramic, residential, institutional, etc.) of the affected area. For each value Mc Harg drew a map, on a transparent paper, using shades of grey that represent the degree of importance of every area related to its social/economic/environmental cost. In a passage describing the process he and his colleagues used to determine the least destructive route for a new roadway, McHarg (1971) wrote:

“let us map physiographic factors so that the darker the tone, the greater the cost. Let us similarly map social values so that the darker the tone, the higher the value. Let us make the maps transparent. When these are superimposed, the least-social-cost areas are revealed by the lightest tone” (p. 34).

Overlapping the map you obtain a composition that include all the social/economic/environmental costs and that permit to see where phenomena are concentrated in an area.

Mc Harg achieved to see there the rout of the new roadway will have caused less damages (lighter grey = minor cost) and what values it will have destroyed.

Mc Harg’s methodology permits to measure, to map, to monitor and to model areas.

“Storing digital data in multiple “layers” is not unique to GIS, of course; computer-aided design (CAD) packages and even spreadsheets also support layering. What’s unique about GIS, and important about map overlay, is its ability to generate a new data layer as a product of existing layers”².

² The concept of Overlay Mapping, https://www.e-education.psu.edu/natureofgeoinfo/c9_p6.html

MC HARG METHODOLOGY

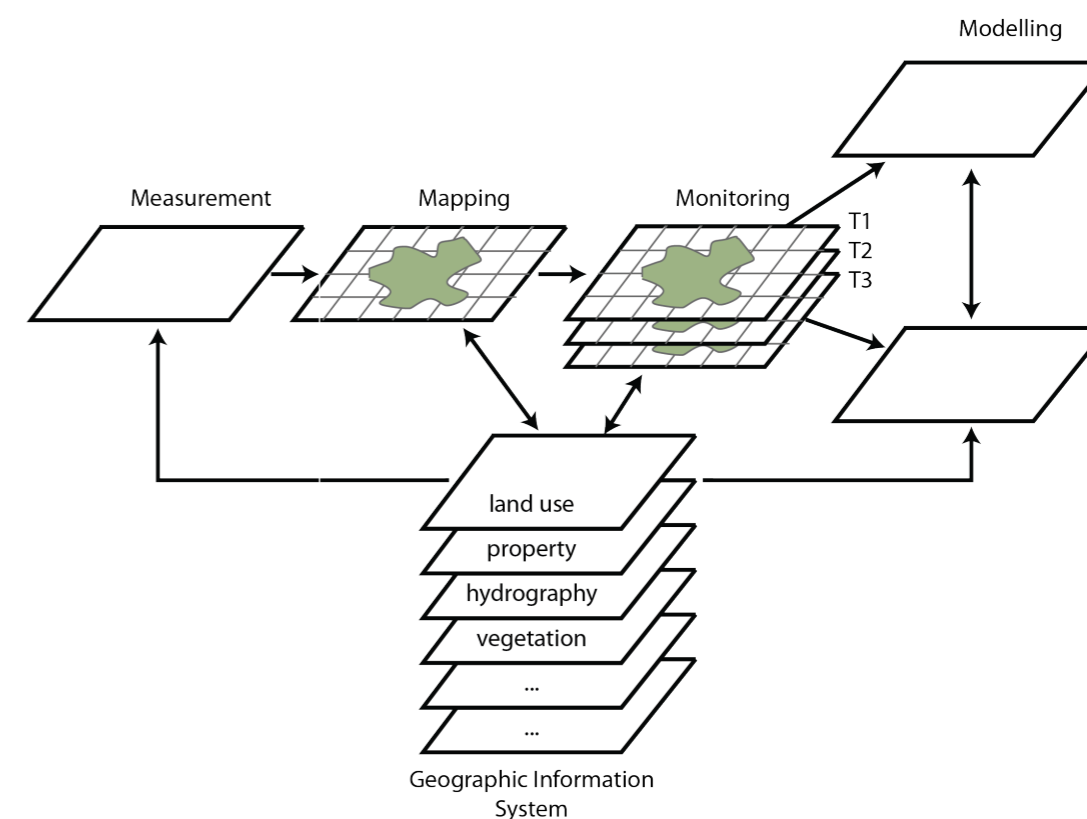


Figure 1. McHarg’s Map Layering Concept and its four M: Measurement, Mapping, Monitoring and Modelling. From this scheme, GIS permit unlimited combinations of mappable features, arbitrarily “weighed” (lighter or darker grey) and electronically combined.

AN EXAMPLE

To give an example, we can mention the interesting Italian experience done in collaboration between ISRPA (Istituto Superiore per la Protezione e la Ricerca Ambientale, body for Protection and Environmental Research) and ISCR (Istituto Superiore per la Conservazione ed il Restauro, body for conservation and restoration). Using GIS systems it was possible to elaborate a preliminary estimate of the cultural goods exposed to water-risks and landslide. ISPRA and ISCR carried out a GIS analysis of different informative layers: landslide risks (source: Progetto Inventario Fenomeni Franosi in Italia); water-risk zones (source: PAI); cultural goods and cultural goods’ vulnerability (source: Carta del Rischio) (Spizzichino et al., 2013).

I.II. LIMITS OF GIS SYSTEMS

At present, the most of Geographic Information Systems are managed through GIS software difficult to understand by non-technicians and non-GIS-experts. It is uncommon for people to own GIS software, to be able to use it and to implement it with data.

GIS SYSTEMS ARE
VERY TECHNICAL

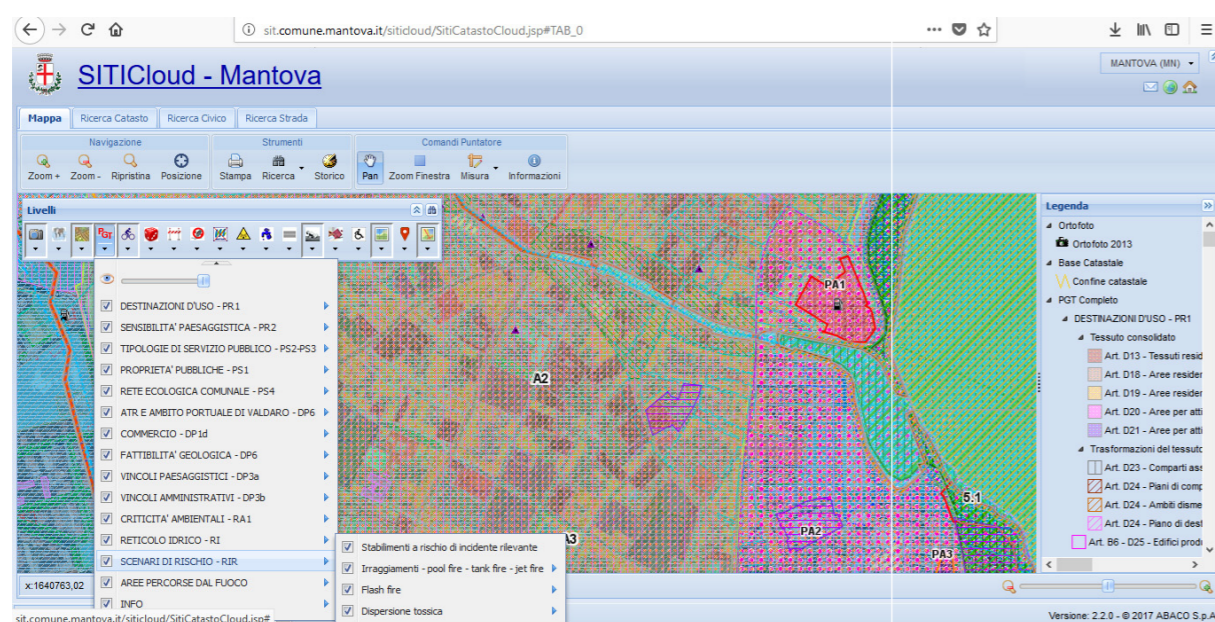


Figure 2. Mantova's SIT is rich of information but it is hard to understand for a non-GIS-expert.

B.h.EN.E.F.I.T. rises the challenge of overtake these limits. It is determined to detect and test ICT solutions able to extend the number of GIS systems' users, including non-technicians, to support the confrontation between different people and departments.

BHENEFIT'S
CHALLENGE

Make GIS systems user-friendly means not only to simplify the planning procedure but also to built a context where the different knowledge interact through debate (Campagna M. 2004).

I.II.I. Identification of the limits related to the Bhenefit project

During the first technical meetings and reunions of the Local Support Group, it was then shown that there were difficulties in making use of GIS systems.

Different subjects expressed difficulties in understanding or using GIS systems, others were interested in functions provided by GIS but they never heard it before.

These emerging difficulties imposed to analyze which were the limits of the GIS systems with an impact on the Bhenefit project. This was achieved talking with Mantova's PA technicians, with local authorities, with professionals (architects and engineers from Mantova's and Modena's professional associations) and with citizens interested in topics related to the Bhenefit project.

The main problems are related to:

THE ECONOMIC
ASPECT

the economic aspect: the cost of the licenses is too high compared to the limited budgets of the Public Administrations. PA can use open source software as established from the article 68 of the Code for Digital Administration (CAD - Codice per l'Amministrazione Digitale). Some recommendations contained in CAD seem to prevent or discourage PA from choosing open source software. The reasons mentioned in the article are - for example - the lack of security³ and assistance, greater difficulties when they are use compared to commercial software and the Service level agreement (SLA). For this reasons Public Administrations are reluctant in choosing open source software, especially the less widespread (word processing is most common than GIS systems).

SKILLS

skills: not all PA technicians have GIS skills, sometime neither the one that deal with urban planning (GIS skills are not mandatory in public competitions).

Professionals are used to the old town planning which had few documents and maps and little information.

Today through a GIS map a professional could know everything he/she has to know on an area or on a building with just one click of the mouse, and

3 sometime open source software represents back doors that make software and computers vulnerable

he/she'll be sure that the information is updated⁴ (he/she does not have to understand if he/she is consulting the latest version of the document). Despite that, professionals are not accustomed and trained to use GIS systems. They complain to have not much time to spend in understanding the town planning and to be afraid to miss information. So at the end they call PA technicians of the different departments to have confirmations with a waste of time both for professionals and for PA technicians.

cooperation: GIS tools are used by a few technicians so it is difficult to use them as basis for confrontation.

data management: not all the data available and useful for PA are possible to Geo-reference. For example, some data are difficult to be allocated in a specific feature rather than in another one.

scale: there are data that should be allocated in an intermediary scale between large (urban planning - GIS) and small (building - BIM) scale. At the same time, it should be useful that the main data obtained by BIM tools (for example transformation costs, management costs, energy efficiency, etc.) could automatically flow into GIS maps. As we will see in deliverable D2.4.2, Autodesk and ESRI recently start a new collaboration to build a bridge between GIS and BIM.

COOPERATION

DATA MANAGEMENT

SCALE

⁴ for example, Mantova's SIT is always updated. If Superintendence adds or deletes a restriction, the web GIS map is updated in a few days.

I.III. CROWDSOURCING SOLUTIONS

The latest developments of GIS systems include formula where the community can become an active participant.

Citizens, professionals, entrepreneurs, can use the information broadcast by administration and public bodies and can insert data in their possession in a safe database managed by the public administration itself (Schulze-Wolf T., 2007).

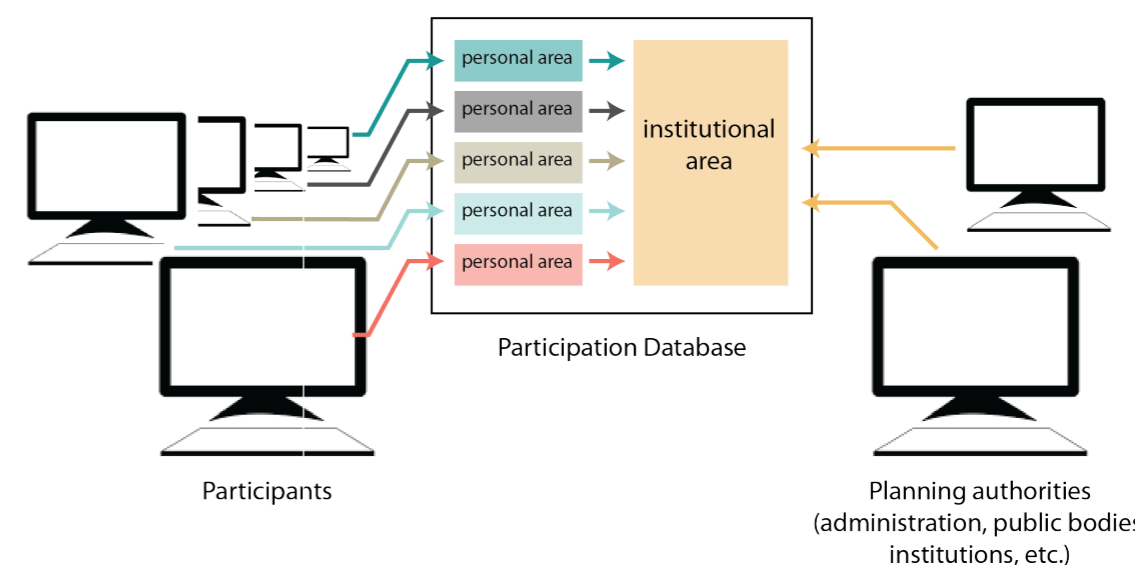


Figure 3. Community can contribute, with data in its possession, to the implementation of the GIS database. Schulze-Wolf T. 2007, revamped version.

CHAPTER I

CONCEPT



The first part of the chapter analyses how to design a monitoring plan in GIS: What are the necessary steps? What are the elements to evaluate? The second paragraph illustrates how to access in the Bhenefit platform and how it is organized. Finally, some in-depth analysis on the framework of the platform: general data, specific data and possible uses.

1.1 STRUCTURE OF THE GIS TOOL - OVERVIEW

According to deliverable DT221 and DT222, it is necessary to design the monitoring plan and, according to this, the platform. What are the goals of the platform? Who will use the platform? It is fundamental to clarify the purposes and the structure of the platform before searching for data and building the web GIS application.

STEP 1. DATA

The first step is to understand which data are already available and which we need to collect to be coherent with the presented needs and intentions. In the deliverable DT221 e DT222 is described how to collect new data. New specific data can be obtained through surveys or through interpolations of available data.

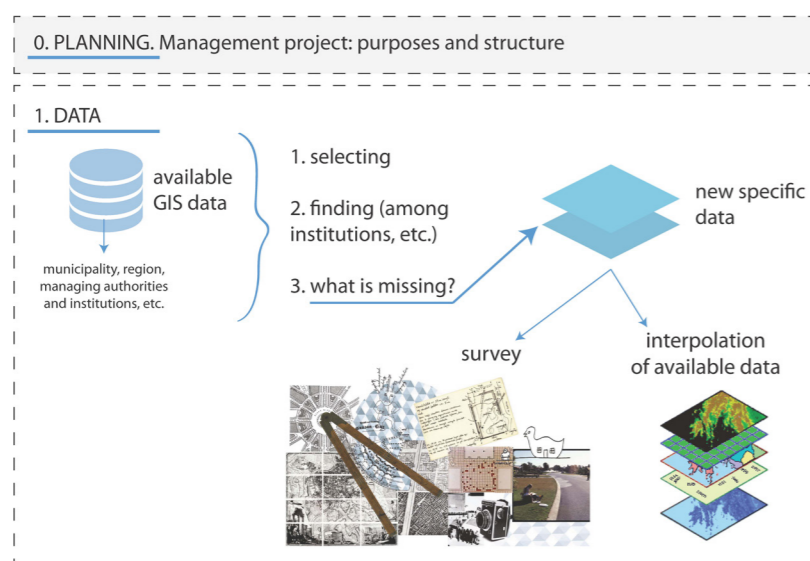


Figure 1. Step n. 1 - DATA

HISTORIC BUILT AREA

STEP 1

STEP 2

STEP 2. DATABASE

Once we have available data and new specific data collected to implement our strategy, we put this data in a GIS cloud system because we want to create something based on GIS but also something to be used by people without specific competencies or software.

After the upload of data, we need to verify if all the data are actually useful (and in this case to delete some layer) or if something is missing (and in this case go back to step n.1).

Data should be update over time: who will upload data? how often is data updated? According to deliverable DT221 e DT222 it is not possible to generally establish how often data should be update. However, rules for periodicity must be specified. These rules can be divided into:

- Strict periodicity - short-term or long-term fixed cycles (it can be linked to local strategy or development program)
- Ad hoc - based on needs (e.g. new planned activity in area) or milestones (e.g. before and after intervention)

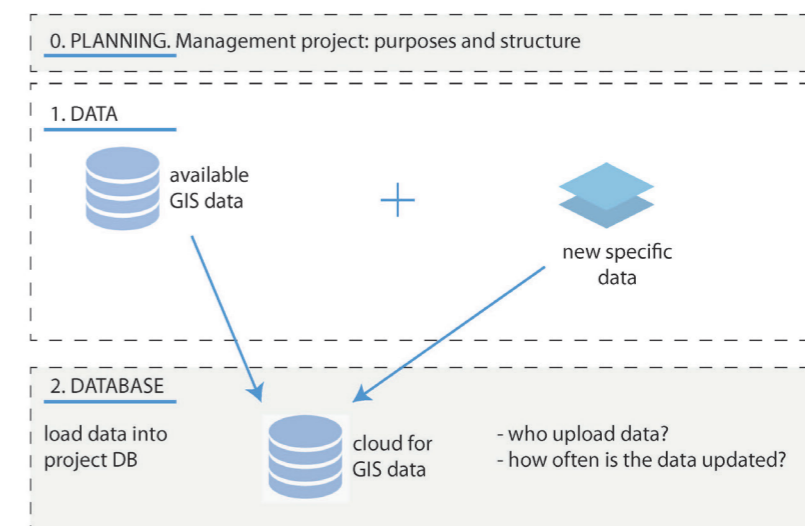


Figure 2. Step n. 2: DATABASE

STEP 3

STEP 3. WEB GIS APPLICATION

Web applications based on GIS data make possible the use and the interface of this data to a general audience without specific competencies or software. Once upload data in the cloud for GIS data, a web GIS application will show them, publicly or inside PA, according to the purposes of the platform.

Every authorised user, simply accessing through his PC (or Smartphone or tablet) could use the platform. The web application is composed by:

- a thematic map
- a legenda to understand the map, on the left, composed by the layers inside the web gis application. Layers can be turn off or on
- some data for every object inserted in the map, shown when the user click on the object
- a toolbar: zoom in, zoom out, save the map, measure, etc., or other tools according to the purposes of the platform

Objects shown in the map can be polygons, polylines or points.

The web GIS application can be obtain though different commercial solution, for example ESRI technology or GIS CLOUD.

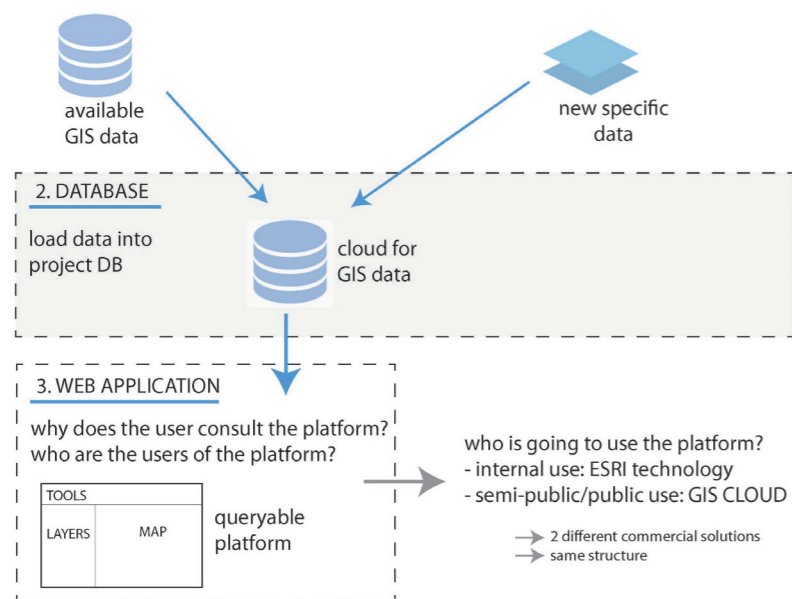


Figure 3. STEP 3 - Structure of the web application

For every user of the web GIS application should be set the role, the visible information and the possible actions.

For example:

USER	ROLE	VISIBLE INFORMATION	POSSIBLE ACTION
Common citizen	Basic user	General information and thematic layer 1, 2 and 3	Consult

Private technicians (architects and engineers)	Editor	General information and thematic layer 1-5	Consult and add information
PA technicians	Administrator	All	Consult and add information
...			

STEP 4

4. CROWDSOURCING

Web GIS technologies like GIS CLOUD give the possibility to involve citizens (or institutions, associations, etc.) in the data collection. Users can fill a form and - once PA technicians validated the data - reports are shown on the map. Crowdsourcing solution is to evaluate as necessary for the monitoring project.

If a crowdsourcing solution is chosen, it is to evaluate if data should periodically be export from the web application and saved in the PA database of the available GIS data.

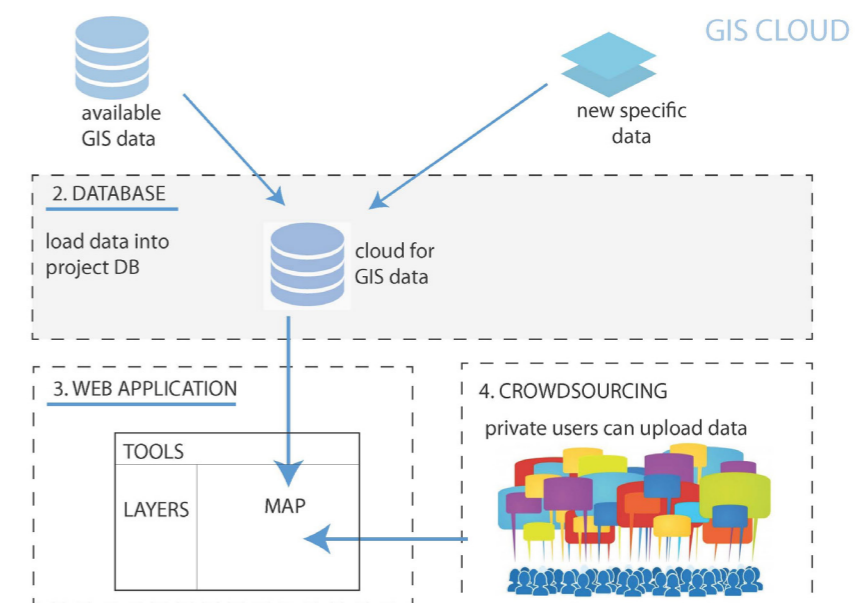


Figure 4. Step 4 - crowdsourcing

1.2 BHENEFIT'S PLATFORM

GIS maps are rich of technical information but usually not user friendly neither attractive, if you're not a GIS expert. Goals and the structure of a GIS map need to be clear or the map will not be interesting for a common user. For this reason, Bhenefit's Platform needs a landing page attractive and able to explain the GIS tool to common citizens. For the testing activities we decided to use the Bhenefit's site to create the landing page.

If you open the Homepage (<http://www.interreg-central.eu/Content.Node/BhENEFIT.html>) you can find the "platform" button connected to the "platform section" on the homepage.

HOME PAGE

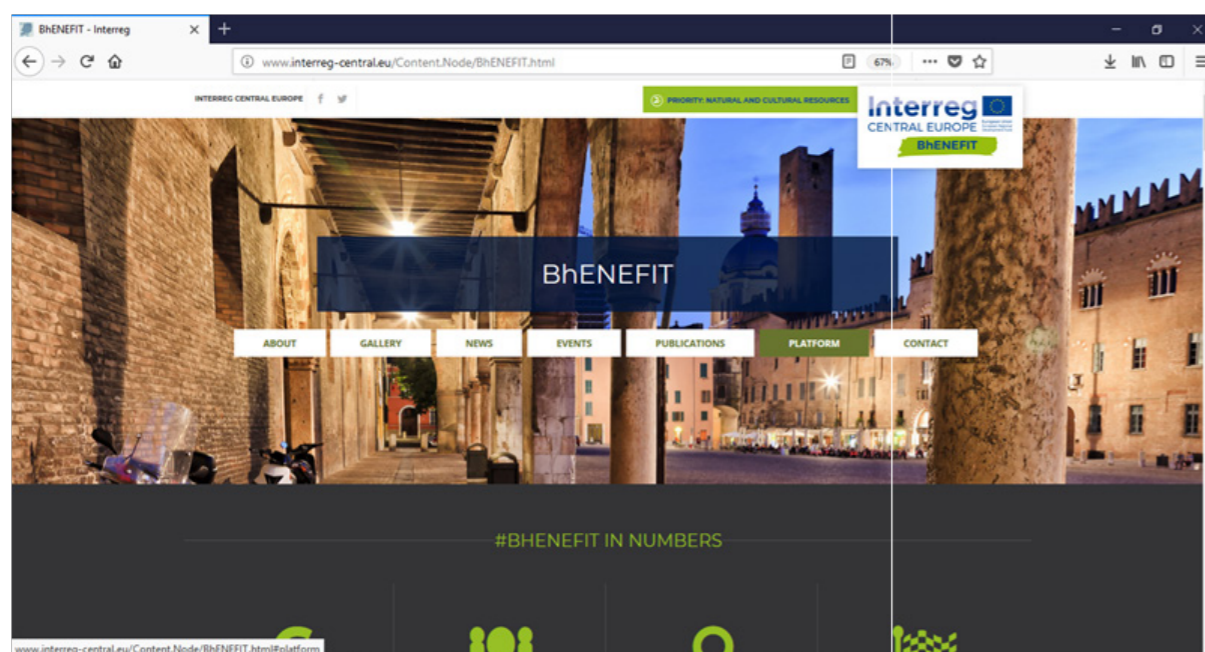


Figure 5. Homepage - platform button

Clicking on the platform button you are drive to the platform section of the Bhenefit's Homepage. If you are interested, you can click on "read more" and you will open the Platform's Landing Page.

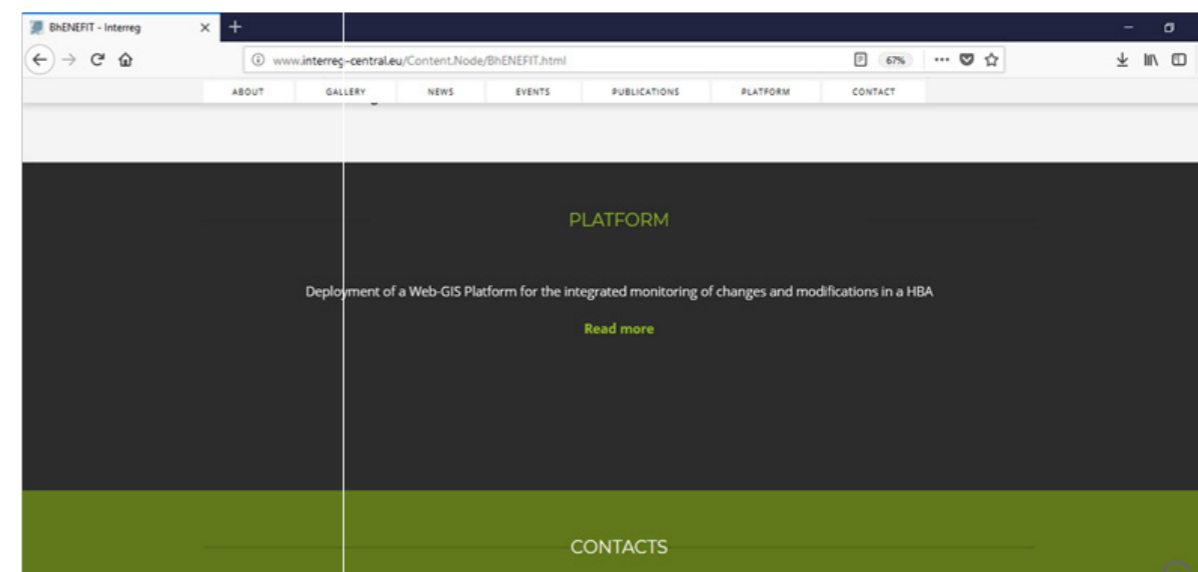
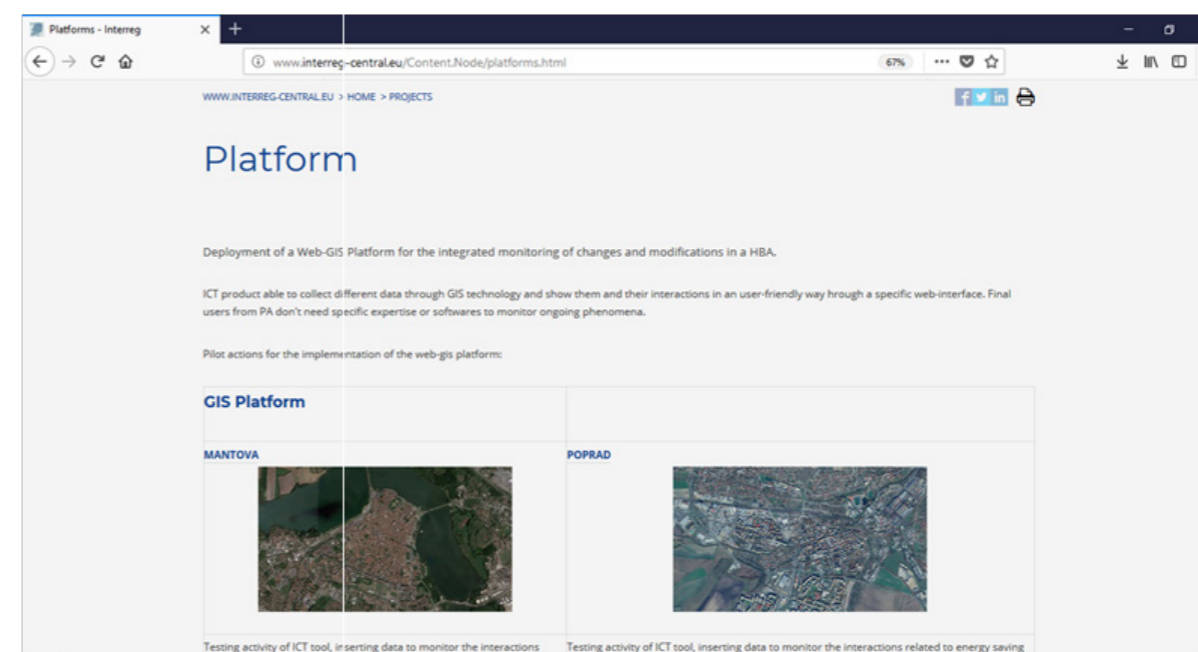


Figure 6. Homepage - Platform section

In the Platform's Landing Page you can discover what a Web-GIS platform is and which are the pilot areas.



LANDING PAGE

Figure 7. Platform - Landing page

Then for every pilot area you can discover goals, users, data collection, final result and possible future development. Finally, if you click on the pilot area you will drive to the GIS application.

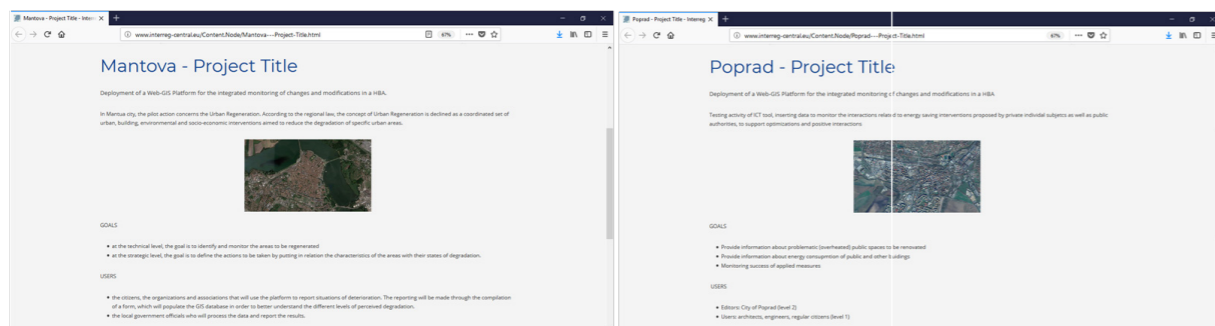


Figure 8. Mantova's Platform - Landing page

Figure 9. Poprad's Platform - Landing page

1.3 STRUCTURE OF BHENEFIT'S PLATFORM

Every platform hosts general data and specific data.

- **general data:**
 - cartographic basis: Who will use the platform? Depending on this, the basic map will be displayed on:
 - technical map: Cadastral Cards, topographical maps, etc.
 - user friendly map: general reference map (e.g. Google Maps, tourist maps, etc.)
 - general information about location, for example data that help people in orientation, or property of the buildings (private or public), etc.
- **specific data:**
 - thematic layers: information on specific topics depending on the goals and the purposes of the platform.

For detecting the data needed in the platform, we suggest to start from the components table and to ask which one are involved. If I want to monitor the X topic, what are the main components to evaluate?

For example, if we want to monitor the HBA public lighting, what are the main components to evaluate?

DATA

MAIN COMPONENTS

EXAMPLES

TOPIC: PUBLIC LIGHTING		
sustainability	components/area of interest	Examples of data, which can be monitored
environment	Energy efficiency	energy consumption
	UHI	
	Water	
	Waste	
	Pollution	
	Mobility	Street safety: lighting related to the type of street
social	Services and facilities	
	Cultural life and leisure facilities	Lighting time planning related to events, concerts, demonstrations, etc.
	Identity perception	Light to enhance heritage
	Gentrification vs. mixité	
	Accessibility	
	Security	Crime and decay perception related to the physical characteristics of the space
economy	Tourism impact	
	Maintenance costs	energy kw / m2/3
	Transformation costs	major interventions

SECOND EXAMPLE

Possible interaction between HBA public spaces and events: what are the main components to evaluate?

TOPIC: PUBLIC SPACES AND EVENTS		
sustainability	components/area of interest	Examples of data, which can be monitored
environment	Energy efficiency	
	UHI	Urban micro-climate condition during the day of the events
	Water	
	Waste	Calendar and route of the door-to-door separate collection
	Pollution	
	Mobility	
social	Services and facilities	Parking
	Cultural life and leisure facilities	Public lighting
	Identity perception	Link between event and genius loci
	Gentrification vs. mixité	
	Accessibility	Accessibility to space and facilities
	Security	Escape route, Surveillance cameras
economy	Tourism impact	Events appearance
	Maintenance costs	
	Transformation costs	

THIRD EXAMPLE

Flood risk: what are the main components to evaluate?

TOPIC: FLOOD RISK		
sustainability	components/area of interest	Examples of data, which can be monitored
environment	Energy efficiency	
	UHI	
	Water	
	Waste	
	Pollution	
social	Mobility	
	Services and facilities	
	Cultural life and leisure facilities	
	Identity perception	
	Gentrification vs. mixité	
	Accessibility	
economy	Security	
	Tourism impact	
	Maintenance costs Transformation costs	

CHAPTER 2

IMPLEMENTATION



2.1 MANTOVA

In Mantua city, the pilot action concerns the Urban Regeneration¹. According to the regional law, the concept of Urban Regeneration is declined as a coordinated set of urban, building, environmental and socio-economic interventions aimed to reduce the degradation² of specific urban areas.

CASE STUDY ON URBAN DEGRADATION



Figure 1. Mantova, Piazzale Mondadori

1 URBAN REGENERATION: Coordinated set of urban-building interventions and social initiatives that include, even with urban renewal measures, the redevelopment of the built environment, the reorganization of the urban structure through the construction of equipment and infrastructures, green spaces and services, the recovery or the strengthening of existing ones, the rehabilitation of the built through the provision of ecological infrastructures aimed at increasing biodiversity in the urban environment (LR Lombardia 31/2014, art.2).

2 URBAN DEGRADATION: Overall condition of deterioration of sectors or parts of cities, within the urban environment, referring both to physical factors (condition of buildings, urban spaces, infrastructures and services) and to economic and social factors (population marginality in the production process and in the social context), most often coexistent (L. 457/1978, art.27)

GOALS

- at the technical level, the goal is to identify and monitor the areas to be regenerated
- at the strategic level, the goal is to define the actions to be taken by putting in relation the characteristics of the areas with their states of degradation.

USERS

The users of the platform are:

- citizens, organizations and associations that will use the platform to report situations of deterioration. The reporting will be made through the compilation of a form, which will populate the GIS database in order to better understand the different levels of perceived degradation.
- the local government officials who will process the data and report the results.

Both categories of users can consult the map or add information on the map. PA technician will verify data inserted by citizens, organizations and associations.

DATA COLLECTION

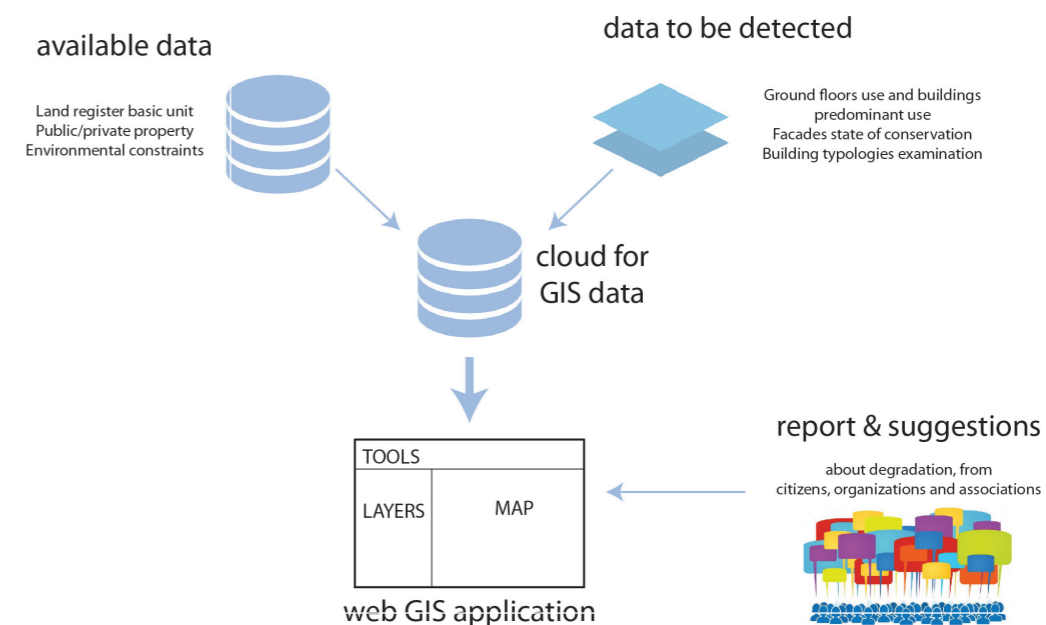


Figure 2. Mantova pilot area - data collection

Data are collected in three different way:

- some data are already available and constantly updated and monitored, as for example public and private property, or public lighting
- some other data are to be collected from scratch like ground floor usage, or buildings predominant usage, or the state of conservations of facades overlooking public spaces
- finally data about degradation are collected from a specific form which will be submitted by people non-member of PA (citizens, organizations and associations)

FINAL RESULT:

- obtain a map which represent the perceptions of degradation from people
- after crossing the perception map with technical data, define which an where are the regeneration area and plan concrete actions.
- monitor the areas before and after urban regeneration projects.

POSSIBLE FUTURE DEVELOPMENT

After the first successful results of this process (by evaluating the response by the involved people, the amount and quality of collected data, and the capacity about suggesting precise solutions), the platform could be extend to other municipal areas.

The GIS platform could also be apply to different topics, as for example the HBA public spaces accessibility.

2.2 POPRAD

In Poprad, the testing activity of GIS tool concerns inserting data to monitor the interactions related to energy saving interventions proposed by public authorities as well as private individual subjects, to support optimizations and positive interactions.

GOALS

- Provide information about problematic (overheated) public spaces to be renovated
- Provide information about energy consumption of public and other buildings
- Monitoring success of applied measures

USERS

- Editors: City of Poprad
- Users: architects and engineers because they need to know problems and risks related to energy consumption and heating in buildings and public spaces to design efficient projects
- Users: regular citizens because maybe they could want to know safe areas where they can go (parents with children, elders, sick persons, etc.)

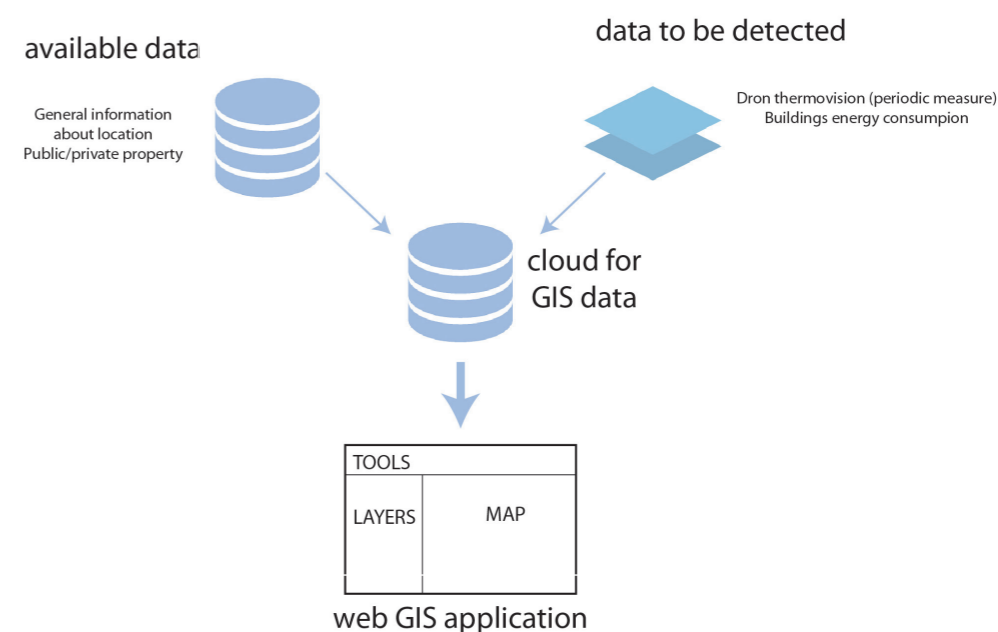


Figure 1. Poprad pilot area - data collection

DATA COLLECTION

- Public spaces: drone thermovision. Through an infrared map it will be show major overheating areas, rise of temperatures for each areas, etc.
- Public - and maybe also private - buildings: manual database input of data on energy consumption.

FINAL RESULT

- Spatial database of buildings with information about energy consumption. A timeline will show how major intervention mitigate the problems and the risks.
- Raster infrared map with timeline (changes during the day and before and after applying the measures)

POSSIBLE FUTURE DEVELOPMENT

- Automatic update via smart sensors in public spaces (lamps, e.g.)
- Automatic update via smart heating system in public buildings
- Real-time risk alert (critical temperature reached) for users. For example, the user can get on the Smartphone the information that is not very safe to go in a certain place because the temperatures will rise too much.
- Real-time emergency breakdown alert

CHAPTER 3


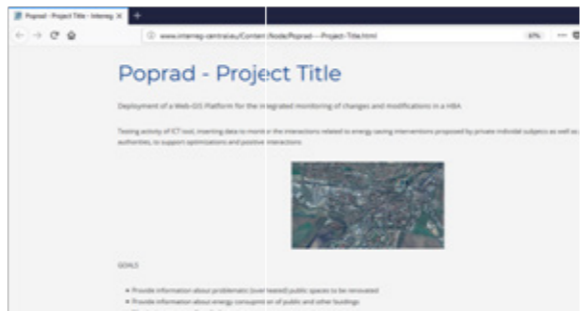
TESTING ACTIVITIES

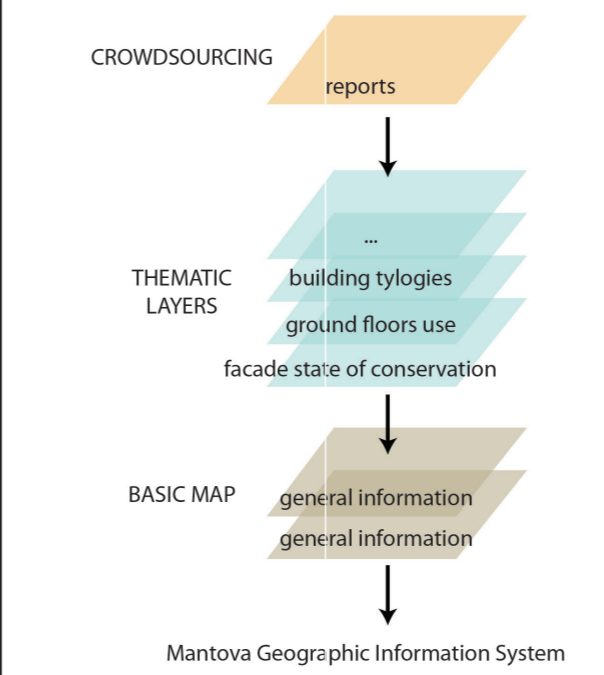
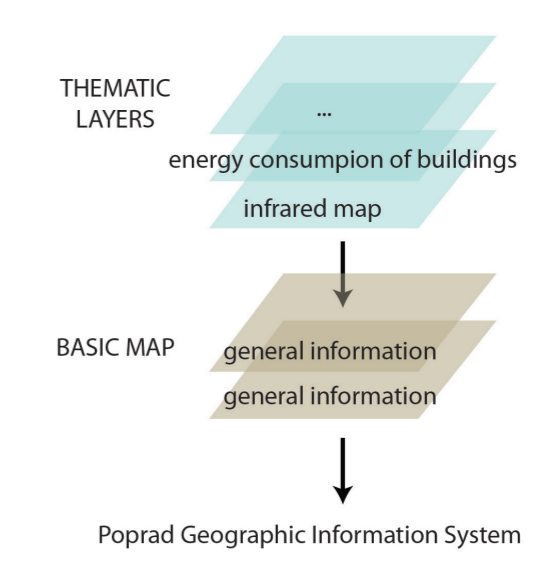


For the testing activities, it was planned to implement the logic described at paragraph 2.1 using two different commercial solution, one in Poprad and one in Mantova.

The logic and the structure of the two different solution are the same, but each solution better fits each pilot area. Poprad's GIS tool is a design mainly for PA. Mantova's PA wanted to collected data from the citizens so it was selected one commercial solution able to develop crowdsourcing. This paragraph shows common elements, dissimilarity and potentiality of the two commercial solutions.

COMPARING
CASE STUDIES

MANTOVA	POPRAD
COMMERCIAL SOLUTION	
GIS Cloud Crowdsourcing solution	ESRI Web GIS
LANDING PAGE to explain purposes and structure of the GIS tool in an user-friendly way	
	
http://www.interreg-central.eu/Content.Node/Mantova---Project-Title.html	http://www.interreg-central.eu/Content.Node/Poprad---Project-Title.html
GOALS and final result	

<ul style="list-style-type: none"> • Monitor people perception of urban degradation, before and after urban regeneration projects. • Changes: subjective and qualitative data (from citizens reports) • Time frame: long period 	<ul style="list-style-type: none"> • Monitor energy consumption and overheating, before and after major changes (projects, actions, etc.) • Changes: objective and quantitative data (from drone thermovision) • Time frame: short, medium and long period
common elements: monitor current state and major changes over time	
MAP LAYERS (Geographic Information System)	
	
<ul style="list-style-type: none"> • Basic map with general information about location • Thematic layers • Reports (crowdsourcing) 	<ul style="list-style-type: none"> • Basic map with general information about location • Thematic layers

- common elements: basic map with general information about location and over this thematic layers
- dissimilarity: crowdsourcing is an important way to collect data for Mantova's pilot area

WEB GIS APPLICATION
Common elements:

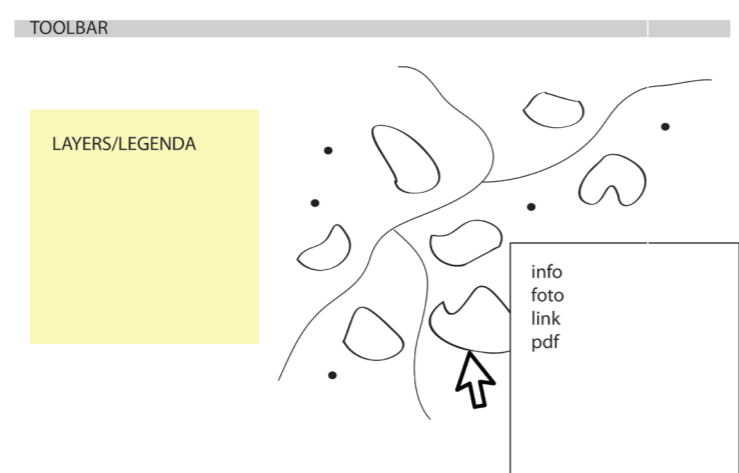


Diagram of the common structure

The look is different but the logic is the same:

- a thematic map
- a legenda to understand the map, on the left, composed by the layers inside the web gis application
- some data for every object inserted in the map, shown when the user click on the object
- a toolbar: zoom in, zoom out, save the map, measure, etc.
- Objects shown in the map can be polygons, polylines or points.

USERS

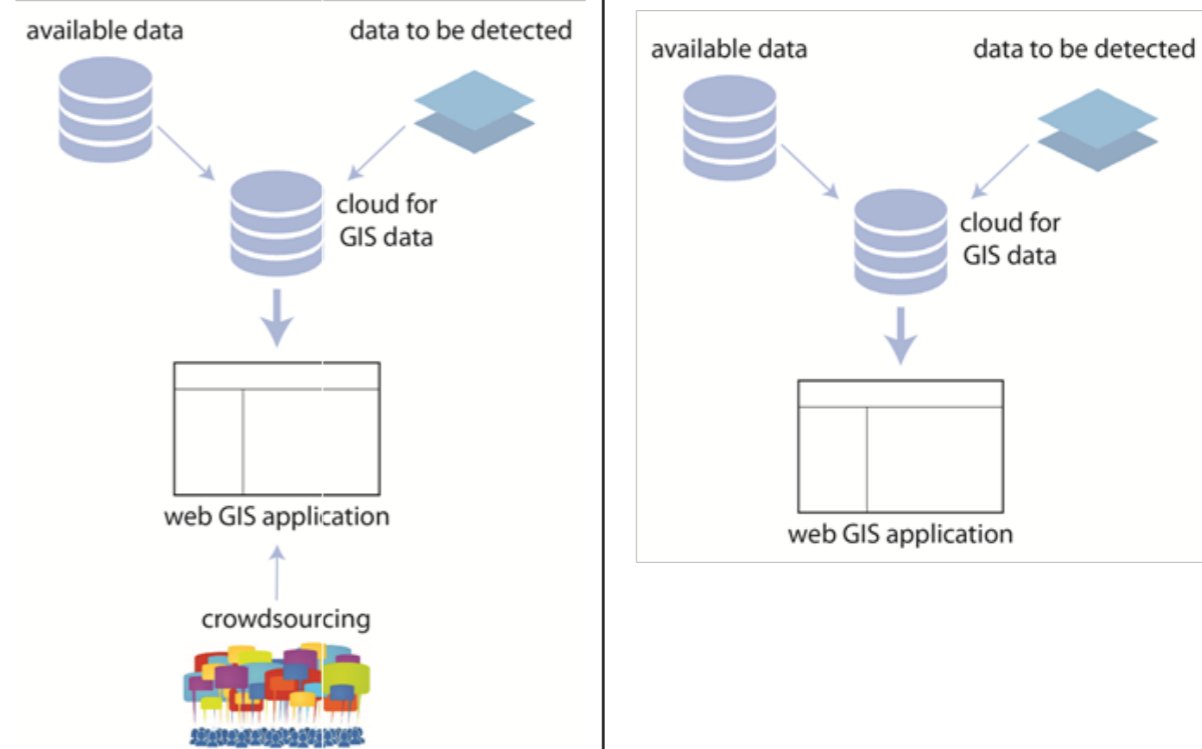
Mainly non-GIS-expert from public and private sector

Both non-GIS-expert and PA technician

DATA COLLECTION

- Available Data
- Data to be detected
- Crowdsourcing solution to involve common citizens

- Available Data
- Data to be detected



4. BIBLIOGRAPHY

- Alexander E., (a cura di Moccia, F. D., 1997), *Introduzione alla pianificazione. Teorie, concetti e problematiche attuali*, Clean Edizioni, Napoli
- Balducci A. (1991), *Disegnare il futuro: il problema dell'efficacia nella pianificazione urbanistica*, Il Mulino, Bologna
- Bobbio G., Vallerga M. (2010), *Il governo del territorio tra legislazione urbanistica, ambientale e delle opere pubbliche*, Giuffrè Editore, Milano.
- BritishBIDs (2015), *Guiding Principles of a Well-Managed BID*.
- Campagna, M. (2004). *Le tecnologie dell'informazione spaziale per il governo dei processi insediativi*. Milano: Franco Angeli Editore.
- Coca-Stefaniak J., Parker C., Quin S., Rinaldi R., Byrom J. (2009), "Town centre management models: A European perspective" in *Cities*, 26.
- Diappi L., 2000, *Sostenibilità urbana: dai principi ai metodi di analisi; forma urbana, energia e ambiente*, Paravia Scriptorum, Milano.
- Giancarlo Deplano, 2004, *Politiche e strumenti per il recupero urbano*, Edicom Edizioni, Monfalcone (GO)
- ISPRA, *Dissesto idrogeologico in Italia: pericolosità e indicatori di rischio. Rapporto 2015. Rapporto 223/2015*, Istituto Superiore per la Protezione e la Ricerca Ambientale, Roma.
- Redazione mediaGEO - Mercoledì, 12 Settembre 2012 09:35 - <https://rivistageomedia.it/>
- Schulze-Wolf T. (2007), "Internet Based Participation: Emerging From a Local Planning Tool To A Federal eParticipation-System", in Sckrenk M., Popovich V., Benedikt J. (eds.), "REAL CORP 007: To Plan Is Not Enough: Strategies, Plans, Concepts, Projects and their successful implementation in Urban, Regional and Real Estate Development" - *Proceedings of 12th International Conference on Urban Planning and Spatial Development in the Information Society*, Vienna, p. 297
- Spizzichino D., Cacace C., Iadanza C., Triglia A. (2013), *Beni culturali e rischio idrogeologico in Italia*, in *Bollettino ICR 27 2013*, Istituto Superiore per la Conservazione ed il Restauro, Ministero per i Beni e le Attività Culturali.