

WebGIS, Cultural Heritage, Preservation, Tourism and the Wiki world: a case study from Emilia Romagna (Italy)

Sabina Magrini^(a)

a) Ministero per i beni e le attività culturali; <http://orcid.org/0000-0003-3309-2354>

Contact: Sabina Magrini, sabina.magrini@beniculturali.it

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ABSTRACT

The Segretariato regionale dell'Emilia Romagna, a peripheral institute of Ministry for Cultural Heritage and Activities, has developed for a few years the WebGIS Geodatabase, which allows a detailed knowledge of own area of responsibility. The database was born after the earthquake of 2012 as an instrument for technicians engaged in damage recognition, and it has increased own functions over time. Especially, after Franceschini's ministry reform (DPCM 171/2014) which has conferred authority for tourism on Segretariati regionali, it has developed aspects and services (Tourer platform) for territory promotion and its cultural identity in term of widespread sustainability and access. For this purpose, the Segretariato began some partnerships and alliances with other actors at the regional and national level, actives on the local promotion and development (Club Alpino Italiano, Touring Club Italiano, Azienda Promozione Turistica della Regione Emilia Romagna), and started productive cooperation with Wiki world. This paper describes these activity results. In this specific context, it is necessary also to highlight the synergy with the Bologna and Parma centers of National Library Service through it cultural goods recorded in WebGIS are enriched with bibliographic data qualitatively relevant and architectural *items* present in the OPAC of two centers have a link to the WebGIS record relating to the good.

KEYWORDS

WebGIS; Geodatabase; Emilia Romagna; Cultural Heritage; Conservation; Slow tourism; Ministero per i beni e le attività culturali; Cooperation; Wiki Loves Monuments; Wikimedia.

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Introduction

On 10 November 2017 the Conference “Sfide e alleanze tra Biblioteche e Wikipedia” (Challenges and Alliances between Libraries and Wikipedia) took place in the Biblioteca Nazionale Centrale in Florence. It was an occasion to explore the various ways Italian libraries and Wikipedia have interacted recently with a special focus on the collaboration between the Wiki world and the Biblioteca Nazionale Centrale in Florence which has permitted the creation of a new model for the subject indexing language of the “Nuovo soggettoario” integrated with Wikidata and the sharing of digitized works through Wikisource.

This contribution was inspired by that Conference and illustrates a slightly different case study from those presented there, viz. the WebGIS platform implemented and managed by the Segretariato Regionale (Regional Secretariat) of the Ministero per i beni e le attività culturali (Ministry of Cultural Heritage and Activities) in the Italian region of Emilia Romagna.¹

Actually the Regional Secretariat’s WebGIS (and its spinoff ‘Tourer’) cannot be described as a Wikimedia project as a whole. Wikimedia plays only a part of the story, but certainly an interesting and important part. So, what exactly is this WebGIS database, how has it evolved in time and what is it gaining from the Wiki experience?

The database

The platform and relevant database were created in the aftermath of the earthquake that devastated a wide area of the Emilia Romagna region in May 2012. Its main aim was to help coordinate, facilitate and speed up the action of the technicians sent by the Ministry to verify and record the conditions of the historical buildings hit by the phenomenon. The Direzione Regionale per i beni culturali e paesaggistici dell’Emilia Romagna (Regional Direction for cultural heritage and landscape of Emilia Romagna) – the regional Office which preceded today’s Regional Secretariat – under the responsibility of Carla Di Francesco was in charge of the operations. Ilaria Di Cocco, an archaeologist with a specialization in Topography and a great familiarity with data crossing, conceived the ‘tool’ in question which combines a GISystem with data about the buildings (castles, fortresses, palaces, churches, bridges etc.) present in the earthquake area.²

More specifically, the interactive geodatabase was created by the Direzione Regionale, the maps and data from the land register were provided by the Servizio Cartografico of the Regione Emilia Romagna (the Cartographic service of the Region Emilia Romagna) whilst the data concerning the historical, monumental sites were elaborated in collaboration with the competent Soprintendenze (State offices responsible for the preservation of cultural heritage). Clearly the project was planned as a ‘cooperative’ business right from the beginning.

¹ WebGIS del Patrimonio culturale dell’Emilia-Romagna, <https://www.patrimonioculturale-er.it/webgis/>.

² Ilaria di Cocco still is the coordinator of the project which has involved and involves to date quite a few units of the Secretariat.

The geodatabase follows the WGS 84 – UTM32 N protocol and is compliant with the main coordinate systems used worldwide; furthermore its software and architecture are totally open source. As concerns the data available in the database, viz. the location on the map and the documentation about each item, the Secretariat's aim is to provide information that is altogether reliable, precise and constantly updated. For this purpose no automatic procedures have been allowed and every effort has been made in order to prevent mistakes, duplications or omissions. All items/historical venues present have been individually checked by highly skilled operators and are strictly linked to a specific section (polygon) of the land register.

Each item is provided with two kinds of information: general data and image/images (when available) open to every user; more specific documents (e.g. the decrees concerning preservation issues) are open for free consultation only to registered users. For privacy reasons the latter normally include technicians working for local administrations. To date (March 2018) the geodatabase records approximately 17.000 items which comprise architectonic buildings, 215 archaeological sites, the locations of the State museums, of 643 Archives as well as the list of the buildings that have been valued of no cultural interest.

The platform is interoperable with other systems such as ViR (Vincoli in Rete) and SICaR (Sistema informatico per la documentazione e la progettazione dei Cantieri di Restauro = Informatic system for the documentation and planning of restoration sites), viz. national databases that record cultural heritage (buildings, objects of art and archival documents) for preservation purposes. Furthermore the fact that an item is registered in the Secretariat's WebGIS is considered relevant in order to apply for State or European funds.

Born in 2012 as a tool developed to help preserve, manage and restore cultural heritage in Emilia Romagna, since 2015 the WebGIS has acquired new functions. This development is related to the reform of the Italian Cultural Heritage Ministry decided by the Government in 2014 (D.P.C.M. 171 of 29 August 2014). The reform has given great emphasis to the touristic vocation of the Ministry, stressing the importance of a new model of sustainable tourism where culture can play a primary role.

In this context a geodatabase which pinpoints efficiently on an interactive map historical buildings and places of interest is obviously an extremely powerful, versatile and useful tool; and it is even more so, if it is enriched with interesting and up-to-date information that tourists may use to plan their visits ahead, discover new places to explore and learn about the history and culture of their destinations.

The network

The Secretariat's efforts have been spent, therefore, in the creation of a network of relations with other subjects active on the Tourism scene such as APT Regione Emilia Romagna (Azienda di Promozione Turistica, viz. the regional Tourism Office), Touring Club Italiano, CAI Emilia Romagna (Club Alpino Italiano) and FAI (Fondo Ambiente Italiano) in order to produce/receive/link new contents which can enhance the touristic potential of the WebGIS. A few examples can illustrate this process.

One of the first ingredients added to the WebGIS platform has been the ‘Rete Escursionistica dell’Emilia Romagna’ (REER), viz. the cartography describing the network of pathways used for trekking present in the region. Each trail has been recorded in the geodatabase and successively, following a formal agreement with CAI Emilia Romagna, it has been possible for trekkers to post photographs of cultural heritage existing along the trail itself. Thus, users of the WebGIS can peruse the itineraries provided by the pathway system, receive information on type and length of the trails and, last but not least, learn about the places of interest they’ll encounter on their way as well as contributing to the promotion of the pathways by posting photos of the points of cultural interest they find.

Thanks to this collaboration with CAI around 4.000 new photographs have been added to the database. This partnership is also a marvelous example of how cooperative, bottom up systems can help increase community awareness in preservation issues: in this way single trekkers contribute with their photographs to the knowledge of cultural heritage often dispersed in the countryside or along mountains slopes, illustrating ‘minor’ or less known heritage sites. It is a well known fact that community awareness and knowledge of local cultural heritage are essential for the wellbeing of the latter. Vandalism, petty theft or deterioration are typical of areas where the link between the locals and the material witnesses of their past has become too loose to be meaningful.

Another significant cooperation has been that with the Italian Touring Club. As noted above, the geodatabase comprises 9.300 items that have been recognized of cultural interest by a specific decree or are so by law because they fulfill some general requirements. Naturally the level of interest of these sites varies greatly, so in order to help tourists choose their destinations the WebGIS has been provided with a sort of ranking system. For this purpose it has been important to work together with the Italian Touring Club as the Club publishes a Guide (the famous Red Guide), which has already received full approval of the Ministry for both its preciseness and completeness. The Touring Club guide uses graphic criteria in order to distinguish clearly the level of interest of the sites it describes: Roman, Italics and Bold in growing order. An asterisk points out items that should not be missed. This ranking has been used in 2016 by the Secretariat in order to offer a selection of sites of extraordinary interest (i.e. the so-called Star Monuments) on occasion of a photographic contest organized with the Touring Club itself in the context of the national competition “Wiki Loves Monuments”.

WebGIS and the Wiki world

Actually, this was not the first occasion in which WebGIS has taken part in the Wiki Loves Monuments competition. Collaboration with the Wiki world began in 2015 when the regional APT first involved the Secretariat in the process of the competition. In that case, for the Secretariat it ‘simply’ meant providing the exact coordinates of the cultural heritage sites on a map. In the 2016 edition, instead, the role of the Secretariat was far more active. The geodatabase offered a selection of 73 Star Monuments highlighted with the Wiki Loves Monuments logo and many of these actually became stars of the Wiki photographic contest as well in Italy. Furthermore many of these

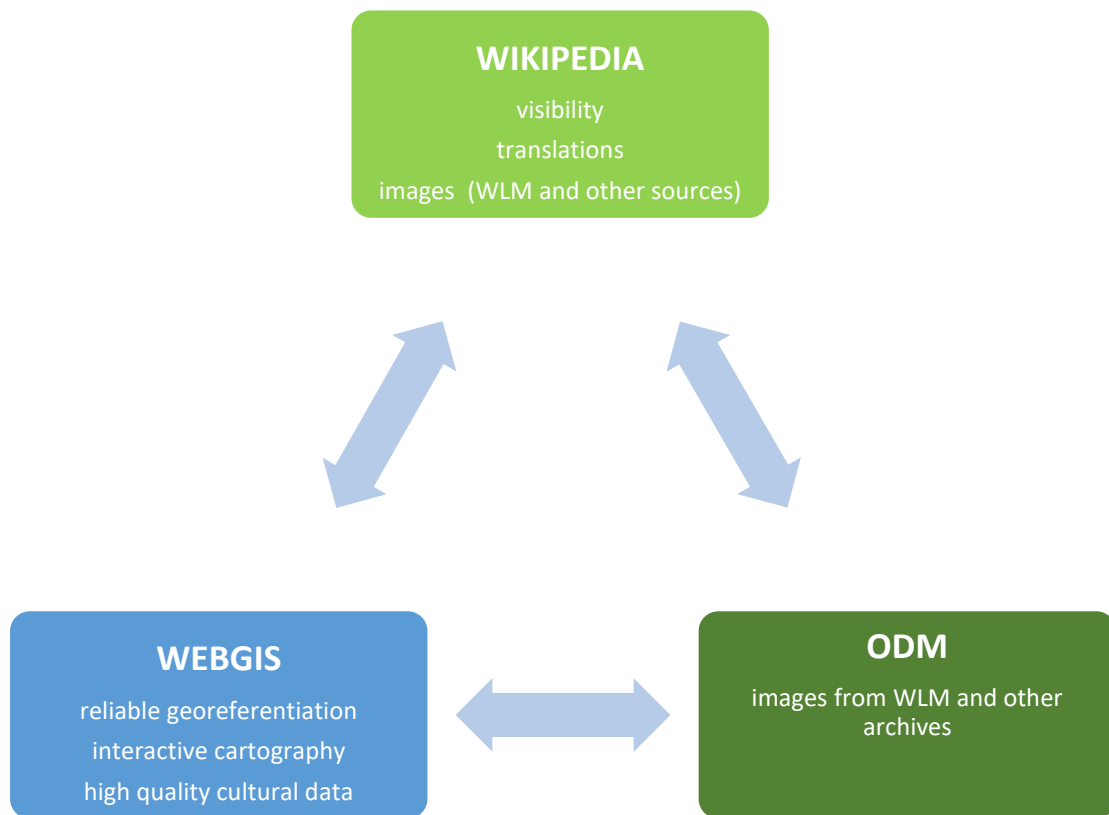
photographs depicting monuments in Emilia Romagna won top places in the international Wiki Loves Monuments competition.

So, on the whole, the 2016 contest in the Region was a great success both from a quantitative and a qualitative point of view. Similarly in the 2017 edition, many of the best photographs in the whole of Italy have been taken in Emilia Romagna. One of the top ten depicts the neoclassical wing of the National Gallery in Parma. The fact is noteworthy as the 2017 edition, in Emilia Romagna, saw the active participation in the contest of the local State Museums and heritage sites such as the National Gallery in Parma itself. No wonder then that, when museums open to new ways of fruition and social promotion, they are the first to gain from the innovation.

As with CAI, also the collaboration with the Wiki Loves Monuments competition contributes to a widespread social awareness of the beauty and importance of cultural heritage in Emilia Romagna. It also helps implement an archive of high quality and high definition images which represents the regional cultural heritage and is freely accessible worldwide. This archive is closely integrated with the Open Data Monument (ODM) project promoted by the regional APT.³ More specifically the ODM project was developed by APT in order to assemble, order and make available the collection of images produced in the previous editions of Wiki Loves Monuments in the region. ODM therefore is a portal from which anybody interested (tour operators, art lovers, press, scholars etc.) can search, find, preview and download images of the regional heritage. The use of these images is regulated by the Creative Commons license (BY-SA and BY-NC-SA). Wikipedia is obviously one of its main users.

The relation that has developed amongst Wikipedia, WebGIS and ODM is typical of a win/win situation where all partners gain from working together: ODM and Wikipedia's pages concerning heritage sites in Emilia Romagna obtain access to reliable geo-referentiation and good quality cultural data from WebGIS; WebGIS in turn obtains good quality/freely usable images from ODM as well as worldwide visibility through Wikipedia.

³ Photo Emilia Romagna - Open Data Monuments, <http://photo.aptservizi.com/>.



Relations amongst Wikipedia, WebGIS and ODM

In these last months the Secretariat has evolved from the WebGIS experience a new platform (freely accessible on the internet from April 2018⁴), known as Tourer. Tourer has been conceived with the tourist in mind and more specifically the slow “traveler”, viz. a person who is interested in the cultural heritage and landscape of the Emilia Romagna region and can take time in exploring less obvious scenarios. Hence its name that echoes the Tour, viz. the Grand Tour that traditionally Europe’s cultural elite used to make in Italy during the 18th-19th centuries followed by the suffix ‘er’ that typically designs “a person who does an action”, in this case that of touring. “E” and “R”, by the way, are also the initials of the name of the region which the platform helps tourists discover.

Tourer is more user-friendly than WebGIS: its core data obviously comes from the WebGIS geodatabase, but its interface is organized in such a way that the user can immediately find information on places of interest in Emilia Romagna (both in Italian and English) and their accessibility, as well as suggested itineraries. Tourer has been developed in the context of the Ducato Estense Project, a project that the Ministry has conceived and funded in order to promote an area that has been home to the Este family for many centuries (Ferrara, Modena, Sassuolo, Reggio Emilia and the area of the Garfagnana in Tuscany) and goes from the Adriatic to the Tyrrhenian Sea.

⁴ Tourer, <http://www.tourer.it/>.

As concerns accessibility issues, viz. – in a narrow sense – how the points of interest can be reached, both WebGIS and Tourer are integrated with OpenStreetMap, a collaborative project which since 2006 has aimed at mapping the planet through data contributed freely to the ‘cause’ by volunteers/government agencies/commercial companies and organized in maps available to all under an Open Database License.

Recently (in January 2016) the OpenStreetMap project in Italy has become part of Wikimedia Italia. So, also from this point of view, there is a direct link between the tools developed by the Secretariat of Emilia Romagna for the promotion of Tourism in the region and the Wiki world. Not surprisingly, therefore, the Secretariat has been invited to present Tourer at the conference “Software e dati Geografici Free e Open Source FOSS4G-IT 2018” organized by Rome University “La Sapienza”, the Associazione Italiana per l’informazione geografica libera (GFOSS) and Wikimedia Italia at “La Sapienza” University from 19 to 22 February 2018.⁵

It will be interesting to understand whether the collaboration with Wikimedia/OpenStreetMap will allow the implementation of new tools or applications which could help increase accessibility to regional cultural heritage – in a broader sense – in the near future. To date, Tourer has concentrated on sustainable accessibility with a specific focus on bike trails, pathways, historical train lines in accordance with the Ministry’s guidelines on the matter. It is also working on providing users precise and updated information concerning opening hours as well as reliable contacts for the various venues. It is however the Secretariat’s aim to give exact assessments on the accessibility of the sites to the physically impaired and facilitate somehow the experience of the latter. The OpenStreetMap project for the blind that is being undertaken in Hannover (Germany) is extremely interesting and challenging from this point of view.⁶ For this purpose the Secretariat is exploring the possibility of creating a partnership with the Istituto Cavazza for the blind in Bologna. The Istituto Cavazza is in fact collaborating with Wikimedia/OpenStreetMap in order to produce a fully accessible itinerary for the visually impaired in the historical centre of Bologna.

Further developments and libraries

In the specific context of JLIS, however, the collaboration that the Secretariat began in 2015 with the library world and more specifically with the Polo SBN UBO (the hub of the national library service centered in Bologna) is also well worth noting. The cooperation started between the Secretariat and the “Giovanni Michelucci” Library of the Architecture Department of Bologna University (now section of the Engineering and Architecture Interdepartment Library) in order to provide new services for the users of WebGIS, on the one hand, and users of the library’s OPAC, on the other. More in detail, it has been possible to create direct links between the heritage sites in the geodatabase

⁵ On occasion of the conference Ilaria Di Cocco and Francesco Marcucci (Cooperativa Alveo, Bologna) have presented the poster “Il patrimonio culturale dell’Emilia Romagna. La tutela dei beni culturali, dalla gestione dell’emergenza alla fruizione turistica: il ruolo del GeoDatabase OpenSource”.

⁶ Projects from the “OSM for the blind” team from Hannover, https://wiki.openstreetmap.org/wiki/OSM_for_the_blind#Projects_from_the_22OSM_for_the_blind.22_team_from_Hannover.

and relevant titles in the OPAC and the other way round (Magrini and Di Cocco 2015). Therefore users of the OPAC find next to a number of titles the WebGIS link to the historical site each specific title is about. More in detail, a relational infrastructure has been created between the catalogue and the database, in order to create a table where each monument is associated to at least one bibliographical item. Every architectural asset in the cartography is identified by an unambiguous number that becomes the key of the system: cataloguers use this unambiguous code to link different bibliographical items which are related to the same monument. Once the reader has opted to go to the cartography he/she can choose amongst a wide array of tools which allow him/her to identify other monuments of the same type and age in the area or discover itineraries involving that specific monument.

Also in this case there is a specific link with the Wiki world: as Wikimedia has pointed out in various public occasions it finds great use in the possibility of pointing to a select and quality bibliography for the items described in Wikipedia.

It is important to stress that the project is providing the occasion for different institutions to collaborate at an equal level in order to enhance the quality and effectiveness of cataloguing without creating too much extra effort. To date (March 2018) also the hub of the national library service in Parma has joined in the collaboration and possibly the latter will interest also the hubs of Modena and Piacenza. Once standard, the procedures involved have not caused any significant alterations to the general work flow. On the other hand, instead, the interaction between libraries and the territory allows exchange of knowledge and a great opportunity to promote cultural heritage and its discovery through forms of so-called slow tourism.

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