

Communication and enhancement of Italian cultural heritage by Google^{*}

[Comunicación y valorización del patrimonio cultural italiano por Google]

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Abstract: Conducting its majority of business in research and indexing information, for nearly a decade, Google search engine has become an economic system that influences our contemporary world, contributing greatly to the transformation of our world into a single virtual globe. In recent years, Google has begun to provide global users with applications or software that are useful for our cultural heritage. This software is highlighted here in its potential, from an economic, cultural and touristic standpoint. Here we try to describe the most important of Google's software (such as Google Maps, Google Street View, Google Earth, Google SketchUp, Google Books and Google Art Project), with the greatest and most evident impact on cultural and touristic sectors. This essay demonstrates Google's digitalization and promotion of Italian cultural heritage through its specific software programs (for eg. Google Street View that has led to the use of remote three-dimensional views of some of the most important monuments and archaeological sites in Italy; the use of Google SketchUp has led to the design of three-dimensional reconstruction of the historic center of L'Aquila city, devastated after the earthquake in April 2009 and never reconstructed), and through several specific partnership programs with Italian Ministry of Culture.

Keywords: Google, cultural heritage, digitalization, Italy, virtual exhibition, collections.

Resumen: Tras liderar la investigación e indización de la información por cerca de una década, el motor de búsqueda Google se ha convertido en un sistema económico que influye nuestro mundo contemporáneo, contribuyendo grandemente a la transformación de nuestro mundo en un único globo virtual. En años recientes, Google ha comenzado a ofrecer a los usuarios globales aplicaciones o software que son usados para nuestra herencia cultural. Este software se resalta aquí en su potencial, desde un punto de vista económico, cultural y turístico. Tratamos de describir lo más importante del software de Google (como Google Maps, Google Street View, Google Earth, Google SketchUp, Google Books y Google Art Project), con el mayor y más evidente impacto en los sectores culturales y turísticos. Este ensayo muestra la digitalización y promoción de la herencia cultural italiana en Google, a través de sus programas informáticos (por ejemplo, Google Street View que ha llevado al uso de vistas tridimensionales remotas de algunos de los más importantes monumentos y sitios arqueológicos de Italia; el uso de Google SketchUp ha llevado al diseño de reconstrucción tridimensional del histórico centro de la ciudad de L'Aquila, devastada luego del terremoto de abril de 2009 y nunca reconstruida), y a través de diversos programas asociados específicos con el Ministerio Italiano de Cultura.

Palabras claves: Google, herencia cultural, digitalización, Italia, exhibición virtual, colecciones.



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^{*} Recibido 9 de agosto de 2012; revisado 27 de febrero de 2013; aceptado 14 de marzo de 2013.

An introduction to Google's role for digital cultural communication

For nearly a decade, Google search engine has become a giant economic system (Stross, 2008; Roncaglia, 2009; Vaidhyanathan, 2010) that is so influential on our modern day world as to contribute heavily in the transformation of the world into "one virtual globe" (Farman, 2010). Google conducts its majority of business in research and indexing information and became both an archive and an universal intelligence system able to interpret and understand the contents cataloged, therefore it needs to be examined as a phenomenon of paramount importance in cultural and political life.

Google provides the global user different types of application and software, useful also for cultural heritage enjoyment and enhancement. Such software has immediately shown its potential in terms of economy, tourism and culture, transforming the rule of the search engine as creator of culture and culture itself, nearby cultural institutions, as well assessed by Matarasso:

"Much as individuals and social groups have cultural values, public bodies, corporations and institutions have cultural values that are expressed in their policies and practice. Sometimes they are articulated in formal statements, though these may describe ideals rather than reality; more often cultural values are unconscious, implicit or unacknowledged. States are the most obvious creators of cultural policies, at national, regional and local level. But they are not alone in cultural policy production. Public and not-for-profit bodies such as museums, universities and even health services each, in their own ways, produce cultural policy. So do private sector corporations, though not all may be conscious of it: Google's influence on culture is complex and profound" Matarasso (2010).

Google's role in digital communication of cultural heritage has become, in recent years, more and more effective, mainly due to deep collaboration between Google and national cultural institutions (such as many museums or national ministries in the world, as the Ministry of Italian Heritage and Culture, henceforth called MiBAC) and international (such as UNESCO). Projects like *Google Art Project* and *Google Word Wonders Project* were born thanks to such forms of partnership. As we will see, partnerships between Google and the most important international institutions for conservation and enhancement of cultural heritage are very crucial to the cultural communication.

On one hand, in 2002 the *Ethical Commitment Statement for ICOMOS Members* (the International Council on Monuments and Sites is the advisory body of UNESCO on issues related to cultural heritage) states:

"ICOMOS considers that the conservation of the world's diverse cultural heritage is the responsibility and privilege of current generations as well as the privilege and right of future generations".

On the other hand, these international associations promote forms of partnership with Google for cultural promotion at all levels and with regard to awareness of public opinion on issues related to the value of world heritage in all its diversity, as also ratified by ICOMOS *Ename Charte* on issues as cultural heritage interpretation and its presentation. These principles are fully espoused by Google.

In this paper, we try to describe the most important of Google's software and projects and, where it is possible, the greatest and most evident impact on Italian cultural and economic sectors (for example the case of *Google Art Project* for the Uffizi Gallery in Florence). Google, infact, has a great importance within digitalization and promotion of Italian cultural heritage through its specific software programs (for example *Google Street View* for archaeological UNESCO site like Pompeii or *Google SketchUp* for historic

city center like L'Aquila) and through specific national partnership between Google Italy and MiBAC.

Therefore, we want also to emphasize how important Google's role is for the visibility of Italian cultural heritage and why the most appropriate choice for a museum, for e.g., is to establish forms of partnership with *Google Art Project* rather than choosing different navigation street level solutions offered by other private companies, using the example of the Uffizi Gallery in Florence.

Google Maps, Google Street View and Italian Heritage

Google Maps (<http://maps.google.it/>) is a mapping service suitable for integration with GPS and other projects and applications. *Google Maps* offers different services, viewable online from Google website, such as a map display option, based on the traditional chart system, and a satellite option, which allows the visualization from an actual satellite site (Schuch Brunet and Freire, 2010).

Google offers the free preview plug-in and installation of software *Google Earth* (<http://earth.google.com/>) which consists of an integral geographical mapping service. Once started, *Google Earth* provides satellite imagery of the planet from a distance of about 16.000 miles. With zooming, the software allows you to focus points on the ground with high precision (Manovich 2008; Farman, 2010). Since May 2007, with Maps' option called *Google Street View*, a sort of an hybrid solution between photography and spatial navigation interface (<http://maps.google.com/intl/it/help/maps/streetview/>), Google displays buildings (which includes a three-dimensional option), roads and traffic and allows you to roam the city streets whilst sitting in a chair. To access the three-dimensional view on *Google Maps Street View*, select and drag the little man icon on the yellow road that you would like to see. The software allows you to move forward and backward along the roads (by arrows) and rotate 360 degrees. With Street View you can see buildings, houses, streets, intersections and even check house numbers. This technology is easily applicable for practical purposes; for example, hotels, residences, shops or real estate for sale or rent; and, therefore, has found application both in negotiations and private sales as well as in the exploration of tourist destinations around the world. We are totally agree with Myers who has clearly shown the potential and the importance of this service, despite of the dilemmas related to personal privacy:

"The Google Street View application, which is now integrated into Google Earth, gives 360-degree panoramic photographs of any location in a number of cities and is perhaps the most controversial of Google's projects. Invasion of people's privacy and personal lives has attracted some negative media attention. One group of English villagers even chased away the Google Street View car, the specially outfitted vehicle that collects imagery while driving along streets" Myers (2010).

Through *Google Street View* one can visit virtually tens of thousands of sites in 360 degrees (a total of 21 countries in different continents), through the use of panoramic photographs taken at street level thanks to a camera-carrying car (*Google-car*) or a camera-carrying trike (*Google-trike*), a car or a tricycle with equipment capable of shooting in 360 degrees.

An agreement reached in December 2009 between MiBAC and Google Italy has led to the use of remote three-dimensional views of some of the most important monuments and sites in Italy, thanks to *Google Street View*.

Under the *UNESCO World Heritage Street View Gallery* (a total of 22 UNESCO sites in different continents: http://maps.google.com/intl/it/help/maps/streetview/gallery/unesco-world-heritage/index.html#related_places/) you can view some of the art-historical and

archaeological sites that are symbols of Italy, like Pompeii and Siena, Urbino and San Gimignano historic centers. The archaeological site of Pompeii (Figure 1) has taken on the task as a *pioneer* of enjoyment and enhancement of Italian heritage through the use of Google virtual technology.

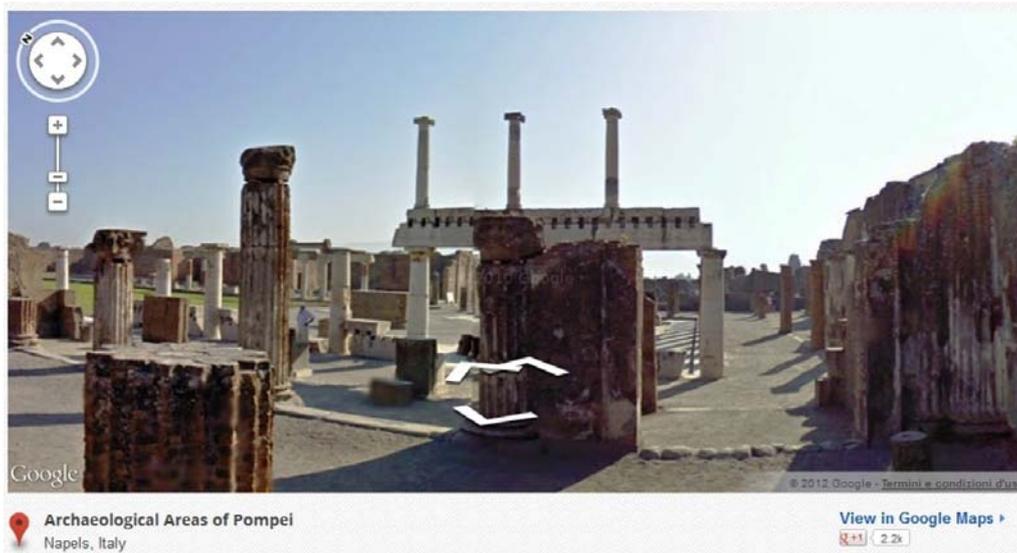


Figure 1. A 360 degrees visualization of ancient Pompeii in the UNESCO World Heritage Google Street View Gallery

MiBAC General Direction for cultural heritage enhancement, has allowed Google-trike, during 2010 and in the first few months of 2011, to move freely between gardens of historic mansions, historic centers, archaeological areas, where other vehicles are not normally allowed. Now, many other sites are available and accessible to visitors, under a section named *Historic Italy* (<http://maps.google.com/intl/it/help/maps/streetview/gallery/historic-italy/>), e.g.:

- Colosseum (this monument is also included in the list under the section *World Landmarks*: <http://maps.google.com/intl/it/help/maps/streetview/gallery/world-landmarks/>), Roman Forum, the monumental complexes of Palatine Hill and Appian Way and the Baths of Caracalla and Diocletian in Rome;
- Hadrian's Villa d'Este in Tivoli (near Rome);
- the archaeological site of Gabii (near Rome);
- Venaria Royal Palace (near Turin);
- Basilica of Santa Maria del Fiore, Baptistery of San Giovanni, Boboli Gardens and Republic Square in Florence (the historic center of Florence is also included under the *Google World Wonders Project*: <http://www.google.com/culturalinstitute/worldwonders/florence/>);
- Capodimonte Palace (near Naples);
- the archaeological excavations of Ercolano (near Naples);
- Caserta Real Palace;
- Amphitheatre Square in Lucca.

Some of these are also available and accessible to visitors under a new Google's cultural platform, named *World Wonders Project*. Officially launched on Google blogspot on 31 May 2012 (Blaschke 2012) *World Wonders Project* brings together several tools available to users in one web-place. Using street view level, you can virtually visit a total of 138 sites (within are those that Google had already digitized through its software

Street View and Earth), developed in partnership with UNESCO (for cultural contents, with UNESCO copyright and links to the UNESCO heritage list and to Wikipedia), World Museum Fund and Getty Images database (for images). *World Wonders Project* collects a lot of information, pictures (with forms of user co-participation), 3D images, texts and videos. This is the latest philanthropic project of Google, focused both on giving visibility to the most beautiful places in 18 different countries in the world and on encouraging people to fight to preserve them. You can find these cultural wonders by geographical locations and browse them by themes. Large is the presence of Italian sites, from Pompeii (Figure 2) to many historic city-centers.

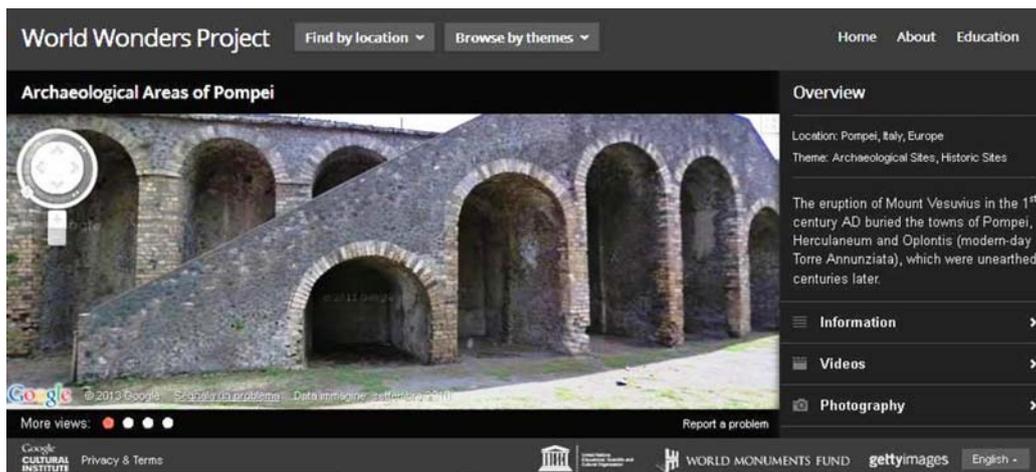


Figure 2. A 360 degrees visualization of the Roman theatre in Pompeii in Google World Wonders Project.

This is the list of *Italian World Wonders*:

- The archaeological excavations of Pompeii (included under sections *Archaeological sites* and *Historic Sites*);
- Castel del Monte in Andria, Villa Adriana and Villa d'Este in Tivoli (under section *Palace & Castels*) and Caserta Real Palace (under sections *Palace & Castels* and *Parks & Gardens*);
- Historic centers of Florence, Naples, San Gimignano, Siena, Urbino, the Late Baroque Towns of the Val di Noto in Sicily, Ferrara and its Po Delta (under section *Cities & Towns*), Trulli of Alberobello (under sections *Cities & Towns*, *Architecture* and *Historic Sites*), Duomo Square in Pisa (under sections *Cities & Towns* and *Architecture*);
- Rupestrian Churches of Puglia and city of Matera (under section *Historic Sites*),
- Santi Quattro Coronati Cloister in Rome (under sections *Architecture* and *Place of Worship*);
- Cinque Terre (near La Spezia) and Costiera Amalfitana (under section *Region & Landscapes*);
- Su Nuraxi of Barumini (under sections *Architecture* and *Historic Sites*) and Temples of Hercules and Portunus in Rome (under section *Architecture*).

We agree with Blaschke, World Wonders Project's Product Marketing Manager, saying, while presenting this new platform on Google blogspot:

"We hope World Wonders will prove to be a valuable educational resource for students and scholars. A selection of educational packages are available to download for classroom use; you can also share the site content with friends. World

Wonders is part of our commitment to preserving culture online and making it accessible to everyone” (Blaschke, 2012).

Compared to the list of sites visible in the *Historic Italy* Street View gallery, as we have seen, there are some new entries. However, in the light of its teaching and educational purposes, it is necessary to report the neglecting to include some sites in multiple sections. Could be misleading to considering, for e.g., both Temples of Hercules and Portunus in Rome as exclusive examples of *Architecture*, or to include Villa Adriana in Tivoli in *Palaces & Castles* section, without indicating their greater relevance to *Archaeological sites* section.

Google Earth, Google SketchUp and Italian Heritage

Using *Google Earth* you can create 3D virtual tours and virtual three-dimensional reconstructions of architectural sites, urban centers, touristic sites, cultural sites, landscapes, etc. In November 2008, *ANCIENT ROME* opens on Youtube (<http://www.youtube.com/watch?v=MqMXIRwQniA>). This channel, born through a collaboration between YouTube, Rai.tv and Past Perfect Productions, will show several documentaries about the eternal city (Figure 3), with the obvious purpose of finding new and inventive ways to give students the opportunity, today as well as tomorrow, to continue studying Roman history and Roman buildings. In 2009, this project became part of *Google Earth* software, with a documentary including the 3D virtual reconstruction of the city, navigable, that restores the image of how the city presented itself in 320 AD.



Figure 3. Channel ANCIENT ROME on Youtube realized with 3D virtual reconstruction on Google Earth.

Google SketchUp is a computer graphics software (acquired in March 2006 by @Last Software and marketed under Google brand name in its first version at the end of April 2006), free provided by Google for three-dimensional modeling, using photo textures, for uploading three-dimensional images on *Google Earth* and *Google Maps* (also available is *SketchUp Pro*, for sale to professionals, public agencies or educational institutions; it is a software designed for outdoor and indoor architecture, for design, for three-dimensional modeling for engineering and construction, and even for design of environments for video games, television and cinema).

The potential of this software, connected to the web version of *Google SketchUp 8*, as of September 2010, is very high. Anyone with a little familiarity with three-dimensional rendering and adequate photographic documentation can make 3D modeling of historic buildings in their city, placing them on *Google Earth* or sharing them on the web. This software enables geo-location, coordinating with *Google Maps* for the placement of the three-dimensional models created. *The Photo Match feature* allows you to extract a three-dimensional building, starting from a simple segmentation of two-dimensional photography (Hudson Smith et alii, 2009).

An example of the possibility offered by this Google's software is the 3D photo-textures reconstruction of L'Aquila historic city center (devastated by an earthquake in April 2009 and never reconstructed), called *Come Facciamo* ("How can we do"), launched by a British architect with Google's support (Figure 4; <http://www.comefacciamo.com/aq3d/index.php>).

In this initiative, currently working are 200 persons to whom Google offered a preparation workshop (with photo documentation of the city built by 400 volunteers), followed by a study of the reconstruction of L'Aquila historic city center.

Connected with the project *Come Facciamo* is the website www.noilaquila.it ("We L'Aquila": Figure 5), a web technology platform, based on Google Map with Street View service, launched in June 2011 for the three-dimensional virtual reconstruction of L'Aquila, whose motto is "Sharing the memory to reconstruct the future". The site is organized and implemented in collaboration with Google, creator of the project, the Community of L'Aquila and the National Association of Families Emigrants (ANFE) that is run by its delegation in L'Aquila.



Figure 4. A 3D photo-textures reconstruction of L'Aquila historic center realized with Google SketchUp on Google Earth.



Figure 5. A 360 degrees visualization of the Duomo of L'Aquila with UGC posted on Google Street View.

Google, which has donated the project to the City of L'Aquila and to the ANFE, has provided the city and its inhabitants its technology, facilitating the collection and creation of stories, memories, videos and photos provided and shared by users (Figure 6), for preserving memory of L'Aquila and its significant artistic and cultural heritage through geo-tagged data. This idea, that is a wonderful example of geo-social digital tagging with user generated contents, useful to write “stories on geographies” (Bonacini, 2013), is also a real *pilot* project that Google intends to make available to all communities of the world affected by natural disasters. Japan, for example, is already among the first countries to have implemented it.



Figure 6. UGC signed in the map of L'Aquila's on Google Map.

Google Art Project as a 360 degrees national galleries' showcase: the case of Uffizi Gallery

February 1, 2011 Google introduced the world to its new thematic portal *Google Art*

Project www.googleartproject.com (also available under the section *Art Project* on *Google Street View*), the virtual transposition of the most important galleries among 17 of the most famous museums in the world, realized through the *Street View* technology adapted to interior viewing. Among them, the Uffizi Gallery was the only Italian museum to join the project, thanks to a convention between Google and MiBAC, with 73 of his masterpieces, including Botticelli's *Birth of Venus*, and 55 artists.

When it was launched in its first edition, *Google Art Project* offered the opportunity to turn 360 degrees in 385 museum rooms under the section *Explore the Museum* and get acquainted with works of art (made by 486 artists from around the world), a thousand of which (all of the most famous works, more precisely 1.061 works) were displayed in *View Artwork* (thanks to a very high resolution: for 17 of these masterpieces the visualization is in gigapixels, corresponding to 7 billion pixels per image) up to the smallest details of the strokes, the finishing and texture of the canvas, even invisible to the human eye.

The interiors of the rooms could also be viewed from *Google Maps* with *Street View* service. Clicking on the works you could get additional information about the painting and the artist through an information box that allowed you to find links to discover other artworks by the same artist; or on YouTube, any videos related to it. Two video-guides had been provided in a special YouTube channel (www.youtube.com/user/GoogleArtProject): the first was how to use the site, the second explained this project, behind the scenes.

In April 2012, Google announced a significant expansion of *Google Art Project*, with 151 participating museums in 40 countries. Capitoline Museums in Rome were the only Italian museum to join this second phase (with 152 artworks made by 80 artists; between them, *Good Luck* and *Saint John the Baptist* by Caravaggio and the equestrian statue of Marcus Aurelius). In July 2012, *Google Art Project* has risen to 155 collections around the world and 6.848 artists, searchable by alphabetical order; in January 2013, it rises to 184 collections and 7.730 artists.

Among these new 29 entries, finally, we can find other 4 Italian collections (Senese Museums Foundation in Siena, Strada Nuova Museums in Genova, Poldi Pezzoli Museum in Milan and Palazzo Vecchio Museum in Florence).

Google Art Project is not a closed project, nor is any software produced by the Californian company in Mountain View. With the section *Create an Artwork Collection* in its first edition and *My Galleries* section in the second one, each user can save any of the details of their masterpieces or create his/her own custom collection (which one can even add comments under the section called *User Collection*); collections can also be shared with others, while retaining ownership of the copyrights of the corresponding single museum masterpieces.

This tool has been designed not only for simple art lovers but also for students and scholars working on particular projects or collections, putting all them in conditions to carry out their research from home on images of the highest quality and share their work with others (in light of similar solutions already tested by websites of many museums, which allow you to select works of art by creating your own collection, made shareable through various sharing channels, by e-mail, blogs, museum communities or social networks).

Google Art Project has been positively assessed, despite the commercial origin of the brand that produced it, because one is lead to suspect the good intentions of this philanthropy, as admits Kasprzak:

"[...] Google's gesture of bringing Street View technology into the museum is more self-aware and constructive, acknowledging the fact that the world is already filled with cultural treasures that should be reaching more people" (Kasprzak, 2011).

There are someone, we aren't agree with, who even compares this initiative to an horror film:

"[...] Google's grainy 'Street View' photography reminds me of the kind of handheld footage favored in horror movies such as *The Blair Witch Project* - a 'look' that is surely anathema to the carefully orchestrated clarity of the galleries in reality" (Sooke 2011).

An operation of this kind favors the modification of information that is expected to be upgraded as is for any archive or museum collection on-line: thanks to the interactivity, the user is allowed not only to provide simple information, but it is for him also a passage towards greater knowledge, that is a great educational goal for museums (Panzeri, 2010).

Google, with *Art Project*, has certainly helped in a profound way to change the communication of culture and art and, to quote the words of Mario Resca, MiBAC General Director for cultural heritage enhancement, helped to create a "shared global cultural consciousness". The purpose is twofold: first, making art and culture more accessible and democratic, bringing the public closer and preserving them with digital technology; second, creating art passion even in the impassionate and motivating them to go to those museums through which they can admire masterpieces in minute details thanks to advanced technologies.

We should evaluate, at this point, if, how much and in what way the impact of *Google Art Project* will contribute to increasing visits to such museums.

Some studies on museum websites have revealed how remote consultation has led to a positive impact on physical visits (Thomas and Carey, 2005).

General statistic about the first week of *Art Project's* release talked about more than 10 million contacts and more than 70.000 personal galleries created by users: certainly a successful way to communicate art on the web, with numbers of visitors unimaginable for ordinary museums.

Many kinds of direct and indirect impacts have been obtained by Uffizi Gallery thanks to *Google Art Project*, during the first eight months after its inauguration (Parlangeli, 2011):

- Direct and indirect impacts on remote visitors and museum visibility: a million and a half of remote users saw the *Google Art Project's* Uffizi on-line section; a link to the official website (that one of the Polo Museale Fiorentino where Uffizi Gallery is located) led to a remote visibility of the Uffizi's webpages greater than before; remote users could more easily identify the official site compared to many others not official who have the word Uffizi in the URL; the official site has averaged more than five hundred visits each day (before *Google Art Project* there were just about three thousand remote visits a month).
- A direct impact on physical visitors: a greater museum visibility and a more easy identification allowed a *crescendo* in real visits, thanks to growing on-line reservations.
- A direct economic impact: through a link on *Art Project*, a more easily identification of the official site led to growing incomes in on-line reservations (some unofficial websites make direct competition in selling on-line tickets, whose prices are often higher: this caused until now huge and not calculable economic losses in booking and electronic ticketing for the Gallery).

Google Books

Google's commitment to the democratic spread through the web both of culture and information dates back to October 2004, when Google Print project was launched

(renamed Google Book Search in November 2005, now just Google Books). As correctly Roncaglia assessed (2009), this commitment was mainly driven by business purposes related to the potential attractiveness of searching contents on this search engine, but without doubt it has significant positive externalities.

Google Books project, agreeing with libraries and publishers, is based on books' digitization owned by the most important national libraries and on indexing of digitized works, allowing the reader to locate them in libraries, bookstores and publishing houses as a result of a keywords' search in this freely accessible multilingual portal (Guerrini and Maiello, 2010).

According to users' researchers and to Google automatic indexing (and also allowing to copyright agreements with publishers, booksellers and libraries), book visualization may be complete or partial and it may cover only index or snippets of the work (textual fragments or cuttings, where there are words searched through the search engine).

In any case, Google Books remains a service offered by the search engine and not a cataloging or bibliographic service which, fortunately, remain the responsibility of library networks, as is the case for Italy's National Library Index System (ISBN), which remains the instrument for a more comprehensive search of printed documents. At the Frankfurt Book Fair in October 2009, Google announced a new service for Google Book Editions: it is possible to buy books directly from Google or from its partner sites, in files form whose format remains Google property, that users can access through many digital devices such as PCs, cell phones, e-book readers, etc. (Attanasio, 2009).

Finally, Google Books, as we have seen for other Google software, provides integration with Google Maps: searching on Books you can see a location, written in text, geographically placed on Google Maps.

After initial hostility generally shared by Europeans (some scholars, like Fontana and Metelli, 2009, are concerned that a universal library of national cultures leads to a "vast sea" in which all local particularity and distinction flatten until they disappear) and an initial suggestion in August 2009 (Attanasio, 2009), on 10 March 2010 MiBAC announced the achievement of the first partnership agreement realized by a national government with Google Books, focused to digitize one million books owned by Rome and Florence national libraries, with a private financing unknown before for Italian library system (De Robbio, 2010).

At Google expense and using its technology, the project plans to scan and digitize books published prior to 1868 (285.000 of which, according to ministerial sources, are already meta-dated by National Library Service) that are often unavailable or catalogued in libraries difficult to reach or in non-national libraries. Within a couple of years, one will be able to consult or download these books for free from Google Books or from shared and supranational institutions such as Europeana portal (with which MiBAC collaborates through its portal-aggregator CulturalItalia). According to this agreement, Italian Ministry has retained rights to reuse books' digitized copies on other platforms. This agreement was clearly different from previous ones, as evidenced by Rapport Tessier (2010), which had analyzed all agreements made with Google until January 2010. These agreements stated that other search engines could not access digitized files, in order to index them or use them as reference. In other words, this exclusivity caused the lack of books indexing and referencing by other search engines. Only metadata, normally produced by partner libraries, were accessible to other search engines, which reduced visibility on the Internet of files managed by libraries and were (until the agreement with MiBAC) a great obstacle to digital libraries development.

Conclusion

No coincidence that we speak today, in many respects, about the "age of Google" (Conway, 2010). According to Vaidhyanathan (2011) we will live in a phase of "Googlization of Everything", in which Google, permeating the whole of our culture even in a partly negative sense, becomes a lens through which we view the world and everything around us.

Even for libraries protection, enhancement and enjoyment (beyond well-known litigation on digital distribution of libraries' contents covered by copyrights, finished in a settlement agreement, and despite of commercial nature interests), we have seen without doubt how Google is proving its influence, as a private organization, in preservation, dissemination and promotion of cultural heritage for a digital campaign without precedence and even open to users' collaboration. Google is a private subject capable of economic investments incomparable with any other digitization project; even the biggest international projects such as Europeana can never compete with Google Books (Guerrini and Maiello, 2010). Europeana, as evidenced by Rapport Tessier (2010), despite the great desire of the EU, stops growing due to non-continuous funding and economic difficulties faced by local institutions through which this portal collects data.

In this sense, the partnership between MiBAC and Google opened the way for a successful public-private collaboration in the realization of a great cultural digitization, that the public sector alone, of course, would not be able to handle (Fontana and Metelli, 2009).

It is right also to recognize the impetus given by this program undertaken by Google and the results achieved by it, even for European and world cultural institutions.

G. Roncaglia (2009) argues that Google Books project has an enormous cultural significance, that would pale the Alexandria Library and would be even closer to Babel Library. We can therefore say, despite controversies, limitations and several technical flaws, that Google is the only private company that has managed to start a project that no public institution of any country in the world has had strength, resources and ability to address in such a determined and effective way. Moreover, regarding Google Books size, various national and institutional projects of libraries digitization (although more valid from a scientific standpoint) are almost amateur in size and numbers.

There is no doubt, in fact, how Google is seen by those involved in culture and cultural heritage, to borrow Conway:

"as a powerful suite of metaphors reflecting how this community simultaneously is embracing and threatened by a rapid shift from analog to digital information. Google is a metaphor for the instant gratification expected in information search and retrieval today" Conway (2010).

And how the future of cultural heritage conservation through digitization "is precisely where it has always been: transforming artifacts into useful new forms and extending their useful life".

One of the biggest examples of the enormous potential that you could express using Google software working together in an interoperable and shareable way, as we have stated, is the case of 3D reconstruction of L'Aquila, using SketchUp in association with Earth, Maps and Street View (a project born from a private citizen idea, being implemented with the support of the citizens of L'Aquila). Mapping or discovering archaeological sites through Google Earth today is a best practice in a modern archeological conception.

Development of new solutions and integration with geo-referenced results by Google continues unabated, and this will show, very soon, the creation of a single interface that can dynamically change, depending on the query.

Google Earth, as was rightly pointed out by Farman (2010), “uniquely engages its users, not as disembodied voyeurs, but as participants in global dialog, represented spatially on the digital map” and is presented as a tool that is apparently highly democratic (and against any privacy), able to visualize in the same way a public road, with StreetView, or an internal camp covered by the secret military, as evidenced by Myers:

“described as a sort of ‘global panopticon’ [...], in which the viewer sees all, but those who are viewed see nothing and, importantly, do not know if and when they are being watched [...] as a panoptic technology of surveillance” (Myers, 2010).

As already seen for Google Books, we cannot judge Google software unambiguously, but instead we must make some ulterior brief specific considerations.

Despite the welcome given, for example, to Art Project (which has been mostly positive valued by many international newspapers and blogs), there are some objections: Google Art Project has been conceived as a container of large hypertext works of art, devoid of context and indications. According to some, there is art in this container, but not the history. Someone risks to examine Van Gogh's brushwork with a microscope, completely losing the overall vision (like the path between Impressionism and Expressionism, the depth of the artist, the social context of the era, the meaning of his art). Museums should be able to stand beside technology, fully exploiting communication and disclosure, but should not be substituted by it.

In order to perform its function of communication through technology, a virtual museum tour should not limit to let we see its halls in 360 degrees (this applies not only to tours offered by Art Project but to most of those available to on-line museums users, which often have to download applications for use them by phone): we have to be put in a position to understand what we see hanging on these walls.

The same applies to architecture and landscape. Visiting an old town or observing the immensity of a breathtaking panorama in 360 degrees with StreetView will never be the same as doing it in person.

Art, architecture, landscape cannot be available only through technology. Art must continue to tell us about itself and museums must continue in their educational mission which is to be intermediaries between knowledge and understanding, making them closer and understandable to public.

Technology can and should be a valuable support, but cannot and should not replace indescribable emotions coming from moments like touring the halls of a museum, walking along the streets of one of the many historic centers of Italy or climbing on its steep mountain side roads, when all of a sudden we see works of art, made by humans or by nature, taking our breath away.

Admiration of a work of art or of a live landscape is quite another thing. Rests assured Walter Benjamin (2000), their aura will never be transmitted through pixels: admiring a work of art in a museum will never be equal to visualizing a reproduction, albeit perfectly detailed.

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Bonacini, Elisa. 2013. Communication and enhancement of Italian cultural heritage by Google. Palabra Clave (La Plata), vol. 2, n° 2, p. 49-63. Disponible en: <http://www.palabraclave.fahce.unlp.edu.ar/article/view/PCv2n2a05>.