#iziTRAVELSicilia:
a participatory storytelling project

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Abstract – **The aim of this paper is to present the participatory project "Sicilia Beni Culturali" on the izi.TRAVEL platform, launched in May 2016and well known on social media as #iziTRAVELSicilia. Recognized as a facilitator of best practice digital promotion and valorization through storytelling and crowdsourcing culture, it has already involved thousands of people. With over 150 audio guides produced on the platform in just over a year, #iziTRAVELSicilia has become a real model of participation in co-creation of cultural values, by practicing the principles set out by the Faro Convention. In this paper we briefly present the project and the example of the Roman Villa of Durrueli and how this platform was and can be furtherused for the dissemination of existing 3D models and for new 3D models, such as those made by the USF - CVAST virtualization project in Sicily.**

I. INTRODUCTION

According to the Faro Convention, knowledge and the use of heritage are part of a citizen's right to participate in cultural life like the other Human Rights defined in the Universal Declaration: cultural heritage contributes to the social, cultural and economic communities' development, based on principles of sustainable resource use.

According to scholars, Information and Communication Technologies (ICTs) have proven their strong and innovative role in the cultural and touristic domain:cultural heritage and tourism demand quality in content disseminationand ICTs can offer museums audiences more freedom and information, especially with reference to context and memorable experiences [1] [2] [3].

Moreover, they could create new values in terms ofthe creation of cultural values, through cultural and emotional experiences, and economic values, with direct effect on cultural institutions and indirect effects on the local communities [4].In fact, as well assessed, ICTs could have an important role by making cultural and tourist destinations and attractions well-known and enjoyable [5].

Finally, they "play an important, if not decisive, role in the process of generating experimental cognitive dimensions and insights" [3].

In this academic and speculative context, methods, tools and rules about cultural fruition and enhancement have changed so deeply that art, historical process and figures, artifacts and landscape changes need to be more understandable through alternative narratives for non-expert end users. Visual digital contents, such as 3D reconstruction, augmented reality, virtual reality, docu-films, fiction, cartoons and so on, allow story-centric narratives to enhance users' understanding of both cultural heritage and historical processes that can build on the "human experience" [6].

In this regard, digital storytelling has becomeone of the most debated disciplines on communication, democratization of cultural content and language to be used [7] [8] [9], together with participatory, crowdsourcing and community-based initiatives to enhance culture [10]. Both digital storytelling and participatory bottom-up initiatives have been facilitated "in the 'making of meaning' and co-construction of memories"[11] by social media such as Flickr, Facebook, Instagram and Twitter.

This paper aims to analyze, izi.TRAVEL's web platform and app, as aninnovative tool for culture and tourism enhancement, as it has been used in a pilot project in Sicily [12].The well-known project #iziTRAVELSicilia soon became a processaimed at enjoyingnew types of cultural and tourism experiencesthrough storytelling by native people such as students, teachers, local experts, museum managers and scholars.

II. IZI.TRAVEL

Digital storytelling platforms are considered the new wave of digital storytelling itself [8] and the izi.TRAVEL platform (Fig. 1), founded in Amsterdam in 2011 and launched in 2013, with over 3 million usages per month

and an annual growth of 100%, has become the most popular free platform for creating museum audio guides and itinerariesin the world based on creativity and storytelling [13].This platform could be considered as a mix of Facebook, Wikipedia and TripAdvisor: it is also a key digital tool not only for on-site visits but also for planning itineraries and further studies.

According to izi.TRAVEL, in fact, every city, site or work of art has a story that needs to be told; brought to life through storytelling, these storiesallow people to discover them and connect with each other. Using the izi.TRAVEL content management system (CMS), both local institutions and users are encouraged to create and manage self-produced cultural digital content and to tell stories, making their own free museum audioguides and cityaudiotours that canbe freely enjoyed by everyone.
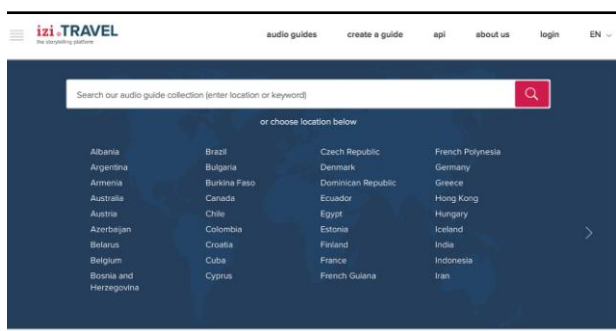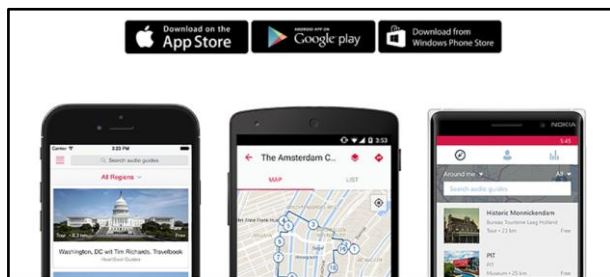

Fig. 1. The izi.TRAVEL search web platform.

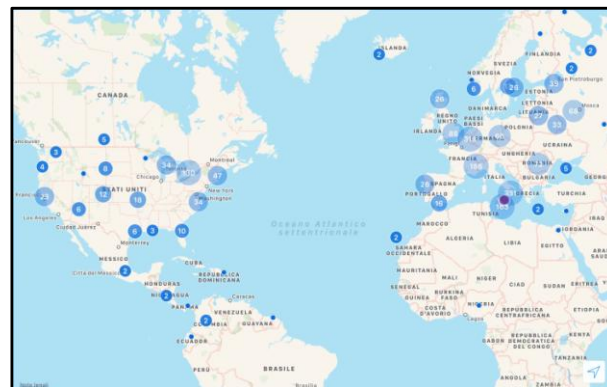*Fig. 2. Preview of the izi.TRAVEL apps on the stores.*

Fig. 3. Screenshot of the audioguides' distribution on the izi.TRAVEL app.

All the audio guides can be viewed remotely online and on mobile phones via the izigeneral app, which is available from App Store, Google play store and Windows Phone store (Fig. 2) and by scanning the QR-Codes in situ.The app can also be used in offline mode if downloadedviathe download section of the general app.izi.TRAVEL allows users to browse the worldwide audio guides with over 5,000 outdoor tours and 1,500 museums in more than 1,500 cities conducted in 50 languages in more than 90 countries (Fig. 3).

The success of this platform is certainly tied to the new awareness of museums and institutions about the need to adjust their language, including by experimenting with the use of digital storytelling.

A. #iziTRAVELSicilia

In Sicily, a largescale regional project was launched on the izi.TRAVEL platform on May 2016 bycreatingregional and local multimedia audio tours and museum audio guides.

Thanks to an annual grant, the research project was financed by izi.TRAVEL itself and thanks to a general agreement between the Regional Department of Cultural Heritage and Sicilian Identity and the University of Catania,this research project aimed to fill the gap in communication and cultural and touristic promotion of Sicilian heritage and territories,under a single regional-level management, coordination and support.

Before the project beganthere were only sevenaudioguidesavailable in Sicilyat all; now there are more than 150 audio guides available (Fig. 4).

As this opportunity had been offered to the whole of Sicily, all those heritage communities that wanted to join (including municipalities, museums, museum networks, cultural associations and tour operators in the territory, as well as schools with educational projects, such as the Universities of Catania and Palermowith laboratory projects, master's workshops theses, and doctoral theses) were involved.

Under this coordination, a network of storytellers was

created, embracing the common idea to promote culture and territories through a bottom-up and disseminated process, involving many other regional and local authorities, institutions, cultural associations, schools, and universities (all the of "heritage communities" cited by the Faro Convention)to guarantee the common right to cultural heritage [14].

In such a way, the project was soon transformed into a participatory process, without distinction forrelative prominenceor importance of heritage sites, but with the common aim of enhancing them.

All those involved become "digital Ciceroni", having embraced the project enthusiastically, encompassing both the "right" to be part of the cultural heritage and the "responsibility" derived from its digital and co-creative promotion and enhancement.

So far, the protagonists of this process are about 3,000 people,who have become storytellers of their own heritage, ranging fromElementarySchool children (as in the case of three guides produced with the Selinunte archaeological park) to High School and Universitystudents (such as the case of all the guides produced within the Catania Regional Polo, the Municipality of Catania and other institutions, or in the case of the Museum network of the University of Palermo), to the museum managers themselves.
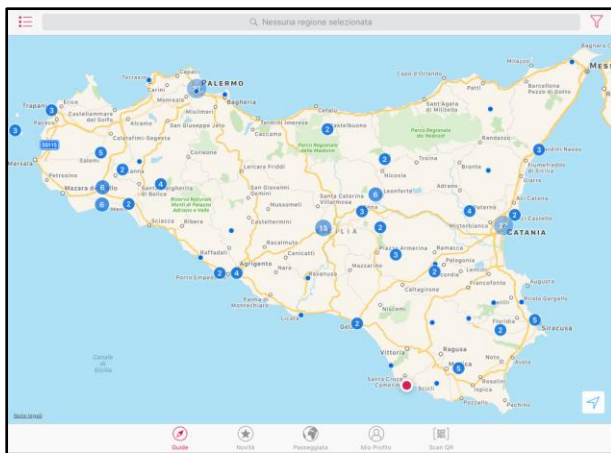

Fig. 4. Screenshot of the audioguides' distribution in Sicily on the izi.TRAVEL app.
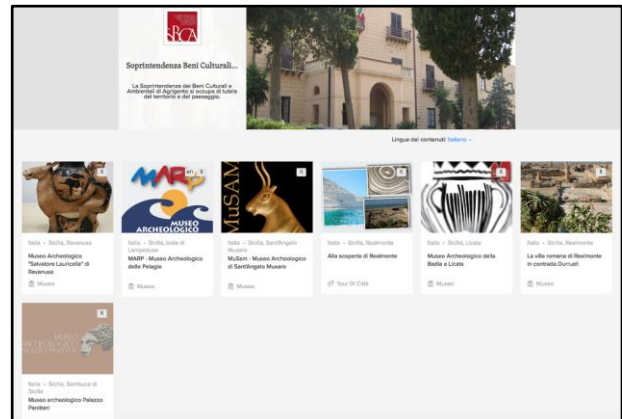

Fig. 5. Screenshot of the Agrigento Superintendency profile on izi.TRAVEL web platform.

So far the collaboration with the Regional Poli, Museums and Sicilian Superintendencies has been extensive.

In many cases, the narrative voices are those of the museum staff, who give their voice to tell the heritage they live and protect every day. One example is the audio guide of the "Paolo Orsi" Regional Archaeological Museum in Syracuse, where all the archaeologists working there introduce every section of the museum and every work of art, telling all of theirunderlying stories.

Particularly productive are the profiles of the Agrigento Superintendency, which has created 7 guides between museums and archaeological sites (Fig. 5). The aim of this institution, through both the izi.TRAVEL web platform and app,was to enhance some collections and sites under its jurisdiction: all small local but very rich archaeological museums (i.e. Ravanusa, Sambuca di Sicilia, Sant'Angelo Muxaro, Licata, Lampedusa), in the Agrigento area, and little known but very important archaeological sites from the historical point of view for Roman Sicily, such as that of the Roman Villa of Durrueli.

B. The Roman Villa of Durrueli: state of the art

The Roman Villa of Durrueli islocated just on the sea on the southwestern coast of Sicily, near the coastal town of Realmonte (a small municipality west of Agrigento) and a few kilometers west of Porto Empedocle, the ancient commercial harbour of Agrigento.

The villais one of the most significant pieces of evidence from the Early Roman Imperial period in Sicily and it is the only example of a*villa maritima*known on the island. It wasdiscovered in December 1907 during the construction of a railway line and a brief excavation was directed in 1908by Antonino Salinas.Some rooms paved in *opus sectile* and *opus tessellatum* were brought to light. Several archaeological campaigns were carried out between 1979 and 1985 under the direction of the Superintendency of Agrigento, in collaboration with the

University of Tsukuba in Japan [15] [16] [17].

The complex overlooked the sea, coming up to the beach, probably with an architectural monument, surrounded by a wall. Analyzing the axonometric plan (Fig. 6), the villa is made up of a residential block, on the eastern side of the archaeological area, with several reception rooms opening onto a courtyard with a five-column squared peristyle(Fig. 7),which surrounds a wide open unpaved court interpreted as a *viridarium*, a sort of garden. The entrance of the reception hall of the dominus, the so-called *tablinum*, was most likely on the north side of the peristyle.The western side of the complex consisted of the thermal baths, divided into two juxtaposed nuclei bya tank inserted between themfor the storage of water [18]. Each part consisted of a large room used as a dressing room, named*apodyterium*, with a complex floor decoration, leading to the heated rooms, where all the elements of the hypocaust system are still visible (i.e. *suspensurae*, ducts, and kilns).The baths also include a large oval pool covered with marble slabs.

Many rooms were paved with two-tone black and white mosaics (such as that of Neptune on the hippocampus orScylla in the act of brandishing a rudder at the center), with touches of color reserved only for the main figures. Based on the finds and especially the stylistic analysis of the floors in opus sectile and opus tessellatum, the architectural complex has been dated to between the late 1st and the first half of the 2nd century A.D.

A new excavation campaign was conducted in July 2017 carried out by Davide Tanasi and Michael Decker, from the University of South Florida in Tampa, and Nuccia Gulli from the Superintendency of Agrigento. New areas of the Roman villa, including new walls and floor levels,were discovered offering new insights intothe villa's life-history, and 3-D scans of the entire site were realized to better understand the complex.

Archaeologists from USF established that the structure was consistently occupied from the 2nd to the 7th century and was reconfigured in the 5th century for producing pottery, bricks and tiles on a large scale.
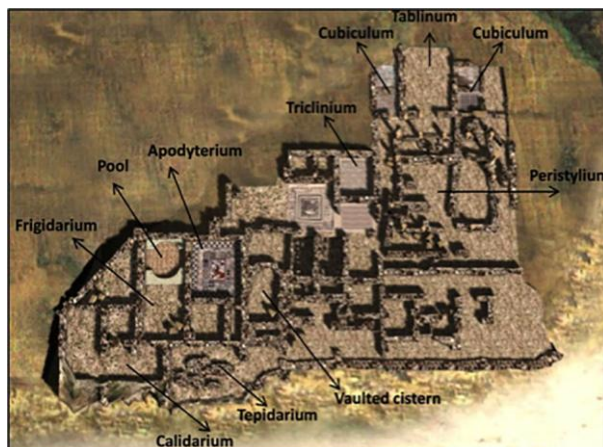

Fig. 6. Axonometric plan of the villa, with indication of the function of the rooms.

Fig. 7. The peristyle of the Villa from North.

C. #iziTRAVELSicilia and dissemination of 3D models: the case of Villa Durrueli in Realmonte project

Presented as a preliminary report [19], the project #ComunicaCultura was fostered by the Superintendency of Cultural Heritage of Agrigento, in collaboration with the authors as external experts in 3D modeling and digital storytelling, within the framework of a 2015 school outreach program. Students of three high schools of the Agrigento area have been involved in order to enhance the cultural heritage of Realmonte, with its main attraction being the Scala dei Turchi, a rocky marlstone cliff by the coast, the still active gigantic salt mines of Scavuzzo, and theRoman Villa of Durrueli.

This project aimed to make students aware of the wonders of their natural and cultural landscape and to contribute to the spread of that knowledge, engaging them with experiential activities such as field studies, analysis of media related with cultural heritage and to guide them in the process of creation of multimedia

content, such as short videoclips, high quality pictures, and 3D models.

As previously stated, "the students, supervised by external experts and by their own professors, produced 3D models of the most relevant rooms of the villa using both 3D scanning and Image Based 3D modelling techniques, as seen elsewhere [20], in order to enrich the videoclips with engaging content. Sets of digital pictures of the peristyle, the western cubiculum, and the apodyterium with the mosaic of Scylla and the pool were processed with the software Agisoft Photoscan in order to produce 3D models.

Furthermore, some details of the rooms, such as the kiln of one of the heated rooms was acquired using the Occipital Structure sensor for Ipad. Subsequently, 3D models were processed and decimated with Meshlab and short clips of the models were created using Cinema 4D" [19].Finally, videos and 3D models were used both for the audioguides on the Roman Villa of Durrueli (https://izi.travel/it/2e86-la-villa-romana-di-realmonte-in-contrada-durrueli/it) and on a tour of Realmonte(https://izi.travel/it/9fd4-alla-scoperta-di-realmonte/it). Specifically, the 3D models of the Villa produced during the didactic project have been included in the Villa of Durrueli audioguide (Fig. 8).

Now, after the USF - CVAST archaeologists launched a 3D model video, it has been included in the Durrueli guide, as the introductory video of the summary, to implement the audioguide content and to enhance new digital information about the site (Fig. 9).

All the results of the latest campaign conducted by USF are being studied. As soon as more detailed information is provided, Durrueli's guide will be implemented in its descriptive and historical content.

This is only one of more examples of how izi.TRAVEL can be used to disseminate 3D contents to better understand spatiality and to contribute deepening of an archaeological storytelling context. In other audioguides, virtual reconstructions of ancient monuments already on Youtube have been used as visual insights for a better understanding of ancient architecture (eg in the case of the Greek Theater of Syracuse, the Greek-Roman Theater of Catania or the Temple of Jupiter in Agrigento).

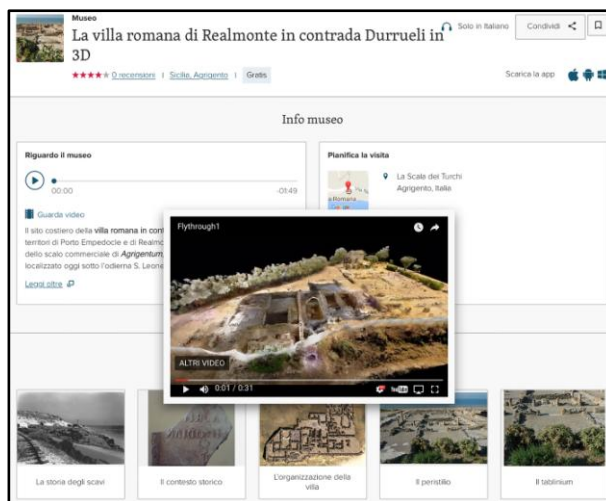Fig. 8. 3D model of the pool made by students, used for the izi.TRAVEL guide of the Roman Villa of Durrueli

Fig. 9. The USF 3D model video, used for the izi.TRAVEL guide of the Roman Villa of Durrueli

D. #iziTRAVELSicilia: a process in progress

The framework here briefly provided only summarizes the results so far achieved. Thanks to this project, Sicily has become the only region in the world to experience such a great participatory, democratic, horizontal and co-creative process in such a coherent and coordinated way, with the only aim to promote and enhance the common cultural heritage. On the same platform, without distinction of ownership and size, small and large museums and different itineraries on the territory are all togheter.

Those who participated in the project, from children to museum directors, did it with their own stories, with their own voice, becaming digital testimonial of their own heritage, helping to make it known and enjoyable.

Finally, this process has already transformed the Sicilian cultural context: all those who have so far never made a network with each other - the two Regional Departments of Cultural Heritage with peripheral offices and the Regional Department of Tourism with Visit Sicily and Tourist Services, Networks of Museums, Museums without distinction of ownership and size, the Universities of Catania and Palermo and the Schools – they are all together on the same platform, already bridging their digital cultural gap.

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