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**TECHNOLOGIES FOR
DISSEMINATION AND
DISSEMINATION
OF CULTURAL AND
NATURAL HERITAGE**

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Abstract: Some cultural and natural places in the Valle del Mezquital, Hidalgo, are little known by the inhabitants of this area and government agencies; This can lead to low value and conservation, above all, a reduction or distortion in the social and cultural practices that are carried out around them. For this reason, technologies have been developed and implemented that allow the disclosure and dissemination of the cultural and environmental heritage of the Mezquital Valley, with the aim of identifying, revaluing, reusing and promoting this type of manifestations and/or places in the region, through the use of Information Technologies (IT) that allow the creation of a web repository and through a mobile application promoting its disclosure and dissemination. For which a theoretical-referential framework on IT tools was structured and a state of the art was consolidated on them to make the appropriate decision regarding development platforms, usability and viability. IT has allowed knowledge to be disseminated and disseminated at a greater speed and with a greater scope, specifically in terms of the dissemination of scientific knowledge, since it is continuously updated with information from researchers, but above all from the users themselves. For this reason, the research is based on an inductive methodology that allows establishing the premises of the Cultural and Natural Heritage Information Center from five phases which are: 1. Analysis and selection, 2. Exploratory research, 3. Interactive development Information Center tools, 4. Integration of the Information Center and 5. Finally the verification of the same.

INTRODUCTION

Currently there is the idea that heritage in general is important to strengthen the identity of society, whether through architectural, sculptural, landscape or natural elements; however, knowledge or reflection on the reasons for considering them heritage elements are usually left to specialists. Paradoxically, most of the international charters in favor of the safeguarding of Heritage point out as a fundamental aspect the awareness of the people or users of these assets, that is, of society in general. This is one of the main challenges in safeguarding Heritage, since it is often unknown how to preserve cultural and natural heritage that is not recognized as such, and therefore is not valued.

The idea of cultural and natural heritage is not recent, and neither is its dissemination and dissemination, since institutions, NGOs, World Organizations have taken on the task of holding Symposiums, Seminars, Workshops, Forums, and other events where It discusses what could be considered cultural and natural heritage, its protection, the guidelines for its management, as well as those involved. However, these events are generally held by and for people who are interested and specialized in the subject. Contrary to the intention and meaning of the concept of heritage, society in general is hardly aware of what is discussed there; of the documents regarding the cultural and natural heritage, he does not even know which sites are considered as such; Paradoxically, most of the documents refer to the vital importance of the participation of society in general, in tasks such as the identification and conservation of “their” heritage.

Now, how to identify and/or recognize the elements that can be considered cultural or natural heritage? Two basic ways are elucidated, one is for personal or social interest and the other for information networks and/

or media. communication, the latter being the subject of this research work, taking Noriega's Interactive and Incremental Development as a reference; leading to what is commonly known as disclosure and dissemination. Although society may be aware of the importance of Heritage, in some cases, the reasons and ways to preserve it are unknown.

The importance of disclosure and dissemination in the safeguarding or conservation of cultural and natural heritage is by no means recent; there have been centuries of research and empirical dissertation. In recent decades, the tools that contribute to the dissemination and disclosure of heritage par excellence have been and are Information Technology (IT). These have become a vital tool for human activity, especially due to the speed in the transfer of information, with media such as the Internet, cell phones, among others. These, in turn, have allowed knowledge to be disseminated and disseminated at a greater speed and with a greater scope. IT becomes a viable tool in the dissemination of scientific knowledge, while at the same time it is affordable to inform about the importance of cultural and natural heritage to society in general.

In terms of cultural heritage, both the Ministry of Culture (SC) [1] and the Ministry of Tourism (SECTUR) [2] have websites that host information related to the dissemination of some cultural and tourist aspects of the states of the country; however, they do not seek to disseminate any type of in-depth scientific research on these places, since they only intend to publicize some relevant data on these places, especially in the case of the page of the Ministry of Tourism.

Now, in the State of Hidalgo there are various associations such as the Citizen Advisory Council of Pachuca, the Citizen Observatory of Tula and Tulancingo, just to mention a few. Which fulfill a restricted role in

the evaluation, proposal and implementation of actions in the areas in which they focus, often due to the dispersion of efforts, ignorance, lack of resources or their affinity with certain political groups that shorten their range of action and their possibilities of autonomy. With this work, it is intended to give a greater diffusion and disclosure of places, elements or spaces that are not so recognized in the Valle del Mezquital, encouraging interest in them, even activating tourist dynamics in their environment.

THEORY

Identification process of cultural and natural assets. The United Nations Educational, Scientific and Cultural Organization (UNESCO) in the Convention on the protection of the World Cultural and Natural Heritage held in Paris in 1972, describes in its article 23 that "... it will provide assistance in the different moments of the preservation of the heritage, [either the] Identification; Protection, Conservation, Revaluation and Rehabilitation and obviously its Preservation" [3]. These moments serve as a basis for understanding the heritage safeguarding process.

Based on the above, and for this work, the methodological process for the safeguarding of Cultural and Natural Heritage from the use of IT is described: 1. Identification, Assessment, Valorization, 2. Dissemination, Disclosure and Sustainable Use, 3. Maintenance-Protection, 4. Conservation, 5. Revaluation, 6. Rehabilitation and 7. Preservation.

The Information Centers are located particularly at the moment of identification, assessment, valorization, it is necessary to understand them, this way in a general way and in relation to the present work.

Assessment. As already mentioned, the first step that has to be done to safeguard a good, whether natural or cultural, is "identification",

it is the moment when people recognize some value to that good; Pérez identifies two dimensions of valuation, one objective and the other subjective, the first traversed by the characteristics of the object itself and the second by the subjectivity of the subject [4], that is, the valuation of heritage, whether cultural or natural. Usually the two types of values are given in parallel and when that “valuation” is given, which can be of a social, cultural or environmental nature, what results is the maintenance of the good. However, there are often cases where the objective aspect is prioritized, which can cause the safeguarding of the asset to have results unrelated to the cultural, natural or social, which would imply a bias in sustainable use; understanding sustainable, whether natural or cultural, that it must generate the least impact on the environment, be economically profitable, but above all, have a broad social benefit.

Identification is also crossed by mental processes, such as memory, meaning and reminiscence, which “...contribute to the perception and relationship that people have, individually, with the architectural work, allowing them to identify themselves and recognize oneself through it and appropriate it in a unique and personal way” [5], aspects that must not be underestimated, since they are usually the ones that make up most of the traditions and customs, strengthening identification and appropriation of cultural or natural assets.

Information centers or observatories. In the origins and concretions of community life, it is possible to identify the natural and cultural dimensions as the two great supports of collective life; because, although they must be understood as different levels of social life and that both show particular determinations that make them very specific levels of practical definition, at the same time both are closely related and cannot be understood without

each other. Thus, a perspective is proposed that manages to identify and explore this reciprocal relationship between the natural and the cultural.

In this sense, an observatory or Information Center for natural and cultural heritage has as its main function to be a site for monitoring the conditions of said dimensions and places potentially considered heritage, based on the generation of collective synergies in which the social actors in the recognition, care, preservation and enjoyment of spaces. These synergies allow the articulation with fundamental actors involved with the management of said heritage from different practices.

Although these Information Centers have different stages during their lifetime, it is important to point out that this depends on the characteristics of each of these organizations and the resources they have. In the operation of the Information centers there may be various types of agents involved, among which are the government, civil society, private initiative, educational institutions, among others.

Heritage. In the Letter from Zacatecas written at the XXIX International Symposium on the Conservation of Cultural Heritage organized by Mexican ICOMOS in the Conclusions section, it is described that “Heritage is not only a set of assets and buildings with cultural or historical [or natural] relevance.], but the dynamic and living totality of the creation of man and nature” [because] “heritage has a universal value of cultural and historical projection that must be reflected in the adequate response of society to each place” [6].

In general, two types of heritage are identified, cultural and natural; The United Nations Educational, Scientific and Cultural Organization (UNESCO) in the Convention on the Protection of the World Cultural and Natural Heritage held in Paris in 1972

characterizes Cultural Heritage [as] “... Architectural, sculpture or painting works monuments, elements or structures of an archaeological nature, inscriptions, caverns and groups of elements, which have an exceptional universal value from the point of view of history, art or science, [as well as] groups of constructions, isolated or together, whose architecture, unity and integration in the landscape give them an exceptional universal value from the point of view of history, art or science and the works of man or joint works of man and nature as well as areas, including archaeological sites of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view and all tangible and intangible assets gibles, which constitute the heritage of a human group, which emotionally reinforce their sense of community with their own identity and which are perceived by others as characteristic”, while Natural Heritage [as] “...natural monuments made up of physical formations and biological or by groups of these formations that have an exceptional universal value from the aesthetic or scientific point of view, the geological and physiographic formations and the strictly delimited areas that constitute the habitat of threatened animal and plant species that have a aesthetically or scientifically outstanding universal value and strictly delineated natural sites or natural areas of outstanding universal value from the point of view of science, conservation or natural beauty” [3].

Information Technology Tools. Before delving into the subject of technological tools, the principle on which the methodology and tools used with respect to IT in this work are based is convenient. Given the logic of the development process of the Alpha and Beta versions that will be deepened later, they are based on Noriega who defines Interactive and Incremental Development as: “...the initial construction of a piece of software, which

grows gradually. gradually, helping those involved in the process to discover problems or nonconformities as soon as possible before the project can lead to disaster” [7].

A tool that can be used to disseminate and/or disseminate the Cultural and Natural Heritage that surrounds us, are mobile applications, whose use has been increasing in recent years. In this sense, a mobile application or better known as an APP, is a software designed for devices such as smartphones or smart tablets [8]. Mobile apps have become one of the main ways people communicate, shop, organize their lives, play games, and even work.

A study carried out in 2013 by the company iab México on the uses and habits of mobile devices found that more than 80% of people have a mobile device (cell phone, smartphone, tablet, portable video game or mp3 with internet connection) and four out of ten users have a smartphone or smartphone. While the average download of applications is 3 to 4 in a period of six months [8]

Given such a scenario, developing an interactive and consultation mobile application will allow the identification of places of cultural and natural interest within the Valle del Mezquital.

MySQL workbench is a software that allows the user the possibility of data modeling, SQL development and complete administration tools for server configuration, user administration, backups and much more, in addition to visually designing, modeling, generating and manage databases. It includes everything a data modeler needs to create complex ER models, forward and reverse engineering, and also offers key features to perform difficult documentation and change management tasks that typically require a lot of time and effort [9].

- Developed by: Oracle Corporation
- Programmed in: C#, C++ and Objective-C

- Operating system: Microsoft Windows
- GNU General Public License
- Version: 8.0.17

MySQL is a relational database management system developed under a dual license: General Public License/Commercial License by Oracle Corporation and is considered the most popular open source database in the world, and one of the most popular in general along with MySQL. to Oracle and Microsoft SQL Server, especially for web development environments. Regardless of the environment in which you are going to use MySQL, it is important to monitor performance beforehand to detect and correct both SQL and programming errors [10].

- Developed by: MySQL AB, Sun Microsystems and Oracle Corporation
- Programmed in: C, C++
- Operating system: Multi-platform
- Version: 8.0.17

Android Studio is a software platform based on the Linux kernel. It was originally designed for mobile devices and allows you to control devices through libraries developed or adapted by Google using the Java programming language. All applications for Android are programmed in Java language and are executed in a virtual machine specially designed for this platform, which has been baptized with the name Dalvik. The chosen distribution license for Android has been Apache 2.0, which makes it a free distribution software. It is software that allows programmers to create applications for the platform, in which it includes projects, it is an example of source code, development tools, an emulator that includes its own libraries that are needed to build the application [11].

Using the Android SDK, maps based on Google Maps data can be added to the app. The API automatically handles access to

Google Maps servers, data download, map display, and response to map gestures. You can also use API calls to add markers, polygons, and overlays to a base map, and to change the user's view of a particular map area. These objects provide additional information for map locations and allow user interaction with the map. The API allows you to add these charts to a map:

- Icons anchored to specific positions on the map (markers).
- Sets of line segments (polylines).
- Closed segments (polygons).
- Bitmap graphics anchored to specific positions on the map (ground overlays).
- Image sets displayed on top of basemap tiles (tile overlays).

Open source Atom source code editor for macOS, Linux, and Windows with support for multiple plugins written in Node.js and integrated Git version control, developed by GitHub. Atom is a desktop application built using web technologies [12].

- Posted in: Electron
- Programmed in: Electron (CoffeeScript / JavaScript / Less / HTML)
- License: MIT License (free software)
- Development model: open source
- Developer(s): GitHub Inc
- Version: 1.40.1
- Website: <https://atom.io/>

Programming languages

PHP: Hypertext Preprocessor (hypertext preprocessor), is a programming language for general purpose server-side code originally designed for the preprocessing of plain text in UTF-8. Later it was applied to web development of dynamic content [13].

- Developed by: PHP Group
- Designed by: Rasmus Lerdorf

- Paradigm: Multi-paradigm: imperative, functional, object-oriented, procedural, reflective.
- Version: 7.2

JavaScript is an interpreted programming language, a dialect of the ECMAScript standard. It is defined as object-oriented, prototype-based, imperative, weakly typed, and dynamic. It is mainly used in its client-side form, implemented as part of a web browser allowing user interface enhancements and dynamic web pages [14].

- Developed By: Brendan Eich
- Designed by: Netscape Communications Corp, Mozilla Foundation
- Paradigm: Multi-paradigm, functional programming, prototype-based programming, imperative, interpreted
- Version: 1.8.5

Web technologies: HTML is a markup language that is used for the development of Internet pages. These are the acronyms that correspond to HyperText Markup Language, that is, Hypertext Markup Language [15].

- Format Type: Markup Language
- MIME type: text/html
- Version: HTML5

CSS is a graphic design language to define and create the presentation of a structured document written in a markup language.² It is widely used to establish the visual design of web documents, and user interfaces written in HTML or XHTML [15].

- Format Type: Style Sheet Language
- MIME type text/css
- Version: CSS3

EXPERIMENTAL PART METHODOLOGY

As already mentioned, for the creation of the Information Center, five methodological phases are proposed: 1. Analysis and selection, 2. Exploratory research, 3. Interactive development of the Information Center tools, 4. Integration of the Information Center and 5. Finally checking it.

However, it is important to clarify that for this work only what corresponds to stage one to stage three is described, the latter being the result for this work.

Phase 1. Analysis and selection. In this phase of the investigation, the collection of sites considered to have heritage characteristics, both natural and cultural, was carried out. Within this, the places were categorized according to four subcategories for each of the general categories, as well as an initial count of sites that can be made known to the population through information technologies.

Regarding the choice of the most appropriate IT on which the dissemination, dissemination and storage of information within the Information Center is based, the scrum methodology is developed as a strategy of good practices for the optimal development of the investigation, which consists of five processes that cover a logical sequence of design and operation. Furthermore, in order to fully understand how people interact with the app, both the user's direct interactions with the device and the app, as well as the external context that the user perceives during their interaction, were analyzed.

This phase is structured in five sub-phases [16], which are synthesized and the results described below.

1.- Design of data collection instrument. In this first stage, a survey was generated that included questions to identify the places that could be considered as cultural and/or natural heritage, as well as the frequency

with which they are visited. In this sense, the results were: in the case of cultural heritage, it stands out that the Archaeological Zone of Tula and the Ex-Convent of Actopan are the most recognized places and with the highest number of occurrences, resulting in 204 and 37 respectively of 400 respondents, in a third place appears the sculpture of the Diana the Huntress of Ixmiquilpan with 31 occurrences, in fourth place the pyramid of Taxhuadá with 28, in fifth the Bridge of Tunititlán with 13, in sixth the Cultural Center of the Mezquital Valley with 12 occurrences and in seventh the Former Convent of San Miguel Arcángel with 9. In the case of Natural Heritage, places such as the Tolantongo Caves or the series of Spas of the Ixmiquilpan corridor are mentioned, which were the most named with 82 and 13 mentions respectively, although these Sites can, of course, be considered to some extent as spaces with outstanding natural features. However, our attention is focused on those places with fewer occurrences.

2.- Calculation of the sample. From the equation to calculate the sample based on Sampieri [17], a sample of 383.48 respondents was obtained, considering a confidence level of 95% and a margin of error of 5%; based on the reference of 216,097 households in the Valle del Mezquital.

3.- Application of the instrument. 400 surveys were applied (from September to November 2016) to people between 13 and 79 years of age from the Valle del Mezquital region, Hidalgo, personally based on the instrument presented above; and through the e-survey platform the results were analyzed, said survey can be consulted at the following link. <http://www.eencuesta.com/answer?testId=AiCY9u658Dg=>. Of the 400 surveys applied, 53% corresponded to the female sex and 47% to the male sex, the fact that 71% of the respondents do not know the concept of cultural and natural heritage was

highlighted, however, they manage to identify places with social recognition or local.

4.- Analysis of results. To analyze the data, the tools provided by e-surveys and spreadsheets were used, where data such as age, sex, place of residence, schooling, with the level of knowledge about the concepts of cultural and natural heritage, places that people from Valle del Mezquital identify in these terms and the possibility of using technological tools for the dissemination and dissemination of the identified places. However, the survey also asked about those Technological instruments for the diffusion and dissemination of Heritage and the result was that the cell phone is the most used technological tool on the same computer. The relevance of this tool can be seen that 87% of respondents would find a tool that provides information on natural and cultural heritage spaces useful; on the other hand, 88% have a smart mobile phone and the predominant operating system corresponds to Android with 82%.

5.- Categorization of natural and cultural sites. In order to order the data obtained from the surveys and field research on the sites with natural heritage value existing in the region, it is proposed within this project the classification from a vision of the so-called environmental services, which responds to a more very pragmatic and is inscribed only within a context of conceptual utility, while for the classification of sites or cultural elements, the time of their construction is mainly taken into account. As a result, the historical categories established by Enrique de Anda [18] were retaken for cultural heritage. The pre-Hispanic before 1498; Viceroyalty Period (1492-1810), Post-independence-revolutionary Period (1810-1910), Modern Period: it is identified from 1910 to the present day. Regarding the natural places that can be considered as natural heritage, the following

subcategories are established based on what is described by Onaindia: Support Services, Provision Service, Regulation Services, Symbolic and Environmental Services [19].

Phase 2. Exploratory research

Analysis of the usability of information technologies. Formally, the most used or recognized definition of usability is the one set forth in the ISO 9241-11 standard, in which usability is described as the degree to which a product can be used by specific users to achieve specific objectives with effectiveness, efficiency and satisfaction, in a specific context of use [20]. The standard defines how to specify and measure the usability of products and those factors that have an effect on it; It also highlights that usability in display screen terminals is dependent on the context of use and that the level of usability achieved will depend on the specific circumstances in which the product is used. The context of use is made up of the users, the tasks to be performed, the equipment (hardware, software and materials), as well as the physical and social environments that can influence the ease of use of a product.

In the IT field, Solano (2015) [21] ensures that people interact with each other and with various hardware and software devices to carry out a series of tasks. The systems that act as an interconnection between people, and that favor the performance of tasks and the achievement of the proposed objectives, are called Interactive Software Systems.

Software development has gone through a series of stages since its creation, at a different level of debugging, so in the Alpha study, the degree of user satisfaction showed that 93% of respondents describe that they have a degree of good satisfaction (87%) and a very low number (6%) have a degree of satisfaction that is not adequate, without a doubt, this last universe will allow us to improve the interface and the content of the application. Based on

the above, the vast majority of those surveyed would agree to download the application (87%) either for its purpose, its interface or its content, as mentioned before, this describes that the application is being well accepted by people and that they would agree to continue using it.

A fundamental aspect to put the mobile application into operation is to go from the Alpha to the Beta version, so it is necessary that the first be evaluated with pilot users and later by the end users; this to determine aspects such as the interface, content, structure and appearance as well as usability, which is considered one of the most important factors in the quality of a software product.

To conform the Beta version and improve the user experience, both internal and external factors of the website and the mobile application were taken into account; therefore, usability was evaluated based on the scope and flexibility of its functions, taking into account the user experience and with the identification of specific problems, in terms of the appearance of the previous analysis, 48% of the respondents reported that is good, this describes us that the Alpha version had no major changes, however, there were 26% of respondents who considered that it is regular, that some adjustments must be made (colors, menu, typography). In this sense, the application interface was sought to be as simple as possible to use, without many dialog boxes to avoid confusion and, above all, to consume a minimum of data.

Therefore, the development carried out to complement and improve the appearance and usability of the final version is shown below.

Interaction diagram. Initially, the design of the interaction diagram was carried out, which allows a complete visualization of the functionality of the technologies, as well as highlighting the main characteristics of the website and the mobile application.

Subsequently, the database allows the administration of each of the data of the different users as well as the information of the places and the implementation of security measures to avoid any illicit event. The modules that were modified were:

- Login.
- User registration.
- Registration and administration of places.

Location of places on Google Maps.

RESULTS

Derived from the importance of recognizing cultural and natural places, as well as from the results presented in the box of functional and usability tests for the final version of the technologies, the results of phase 3 are presented below. Interactive development of the tools of the Information Center, where IT is defined for the Information Center of the Cultural and Natural Heritage of the Mezquital Valley.

On the home screen of the website (Figure 2) the main user interface is shown, where images of the landscapes found in the Mezquital Valley can be viewed in the background, in the second instance there are accesses to the different sections of the page. Among these are:

By sliding to the bottom of the main screen, you will find the review of the cultural and natural heritage of the Valle del Mezquital and a gallery of images as can be seen in Figure 3.

As can be seen in Figures 4 and 5, both in the “Natural Heritage” and “Cultural Heritage” menus, the natural and cultural places found in the Mezquital Valley can be viewed, in addition to the concepts that make it up.

The “Know more” button, which can be seen in Figure 5, leads to another screen which shows the information on the selected place, as well as its characteristics, the location

on the map, in addition to the extensive one that contains the complete description of the place. place (Figure 6).

In addition, in order to maintain a relationship with the end user, the “Contact” section (Figure 7) has been developed to collect information that contributes to the continuous improvement of the published data and the improvements that, at the discretion of the users is necessary when browsing the site. Likewise, it can be seen in Figure 8, the “About” menu, which shows in detail the general purpose of the website.

Finally, so that the administrators have the possibility to document the new places analyzed and to share relevant data that is considered to be of interest to the end user, the website has a session enabled to update the information on the website (Figure 9).

Regarding the user interface of the mobile application, the main screen shows the login, for registered users, and a registration option. Once successfully entered with the registered user, it will show the start menu. The start menu (Figure 11) shows four buttons, in which are:

1. Natural and cultural heritage.
2. Natural places.
3. Cultural places.
4. About.

These options will allow access to information and navigation in the application.

In Figure 12, detailed general concepts of cultural heritage and natural heritage are shown. When selecting the Natural Places option (Figure 13-14), a geolocation map is displayed, in which the place selected by the “select a natural place” area and a “view information” button is identified with the marker. When opening the drop-down list of the “Select a natural place” area, the available natural places are displayed, positioning said marker on the map, the location of the place that was selected.

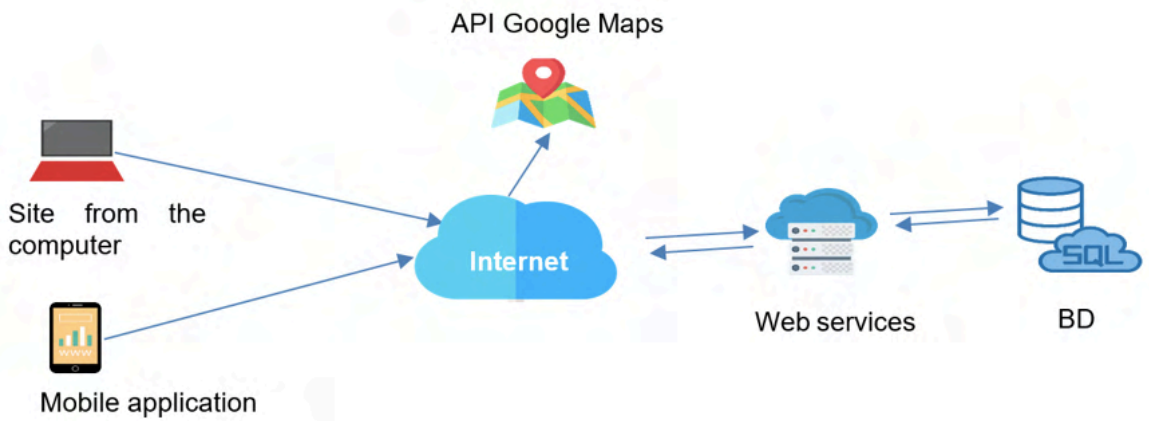
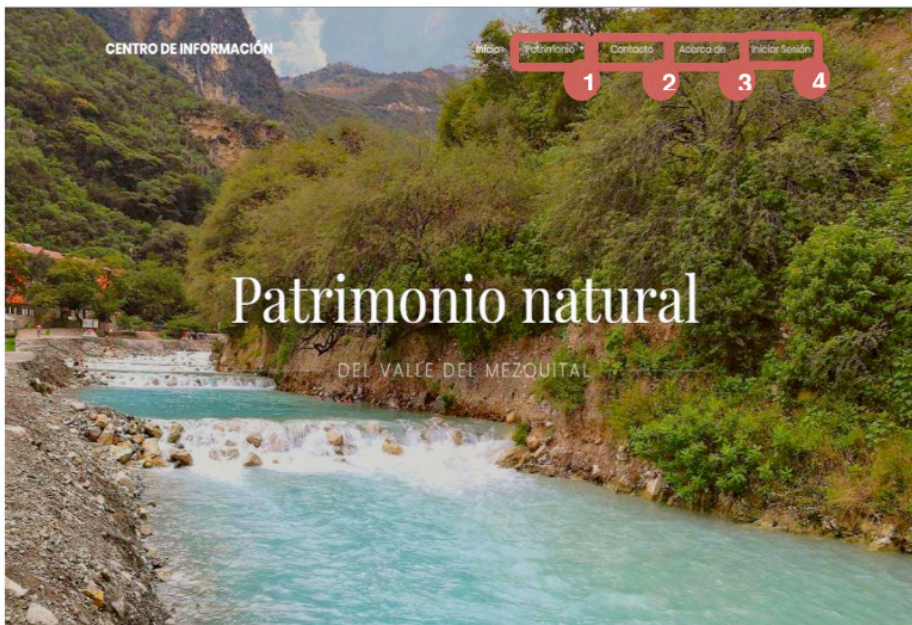


Figure 1 IT interaction diagram



Heritage: displays a menu with information options
Contact
About Login

Figure 2. Main screen of the Website



Figure 3 Information Center Overview

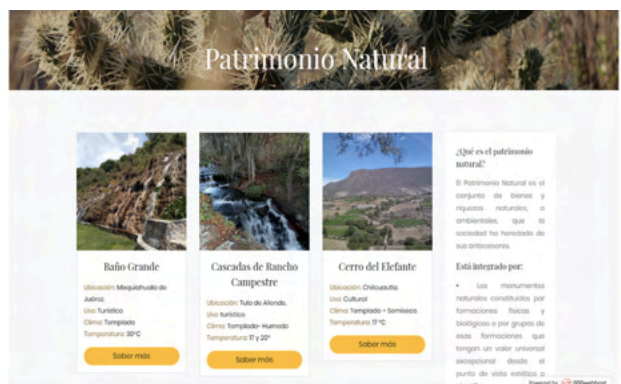


Figura 4 Menú Patrimonio Cultural



Figure 5 Cultural Heritage Menu

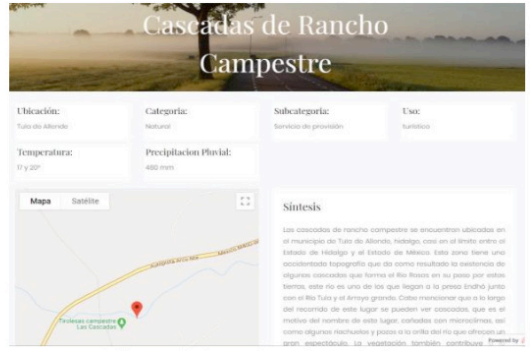


Figure 6 Location description

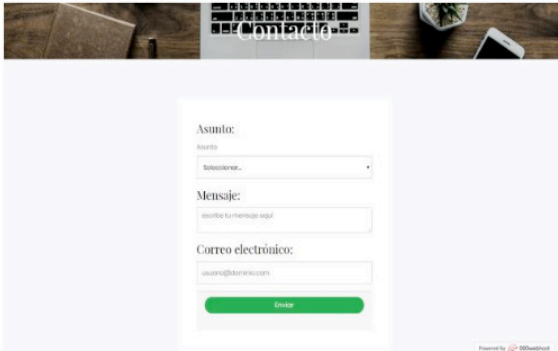


Figure 7 Contact Menu



Figure 8 Menu

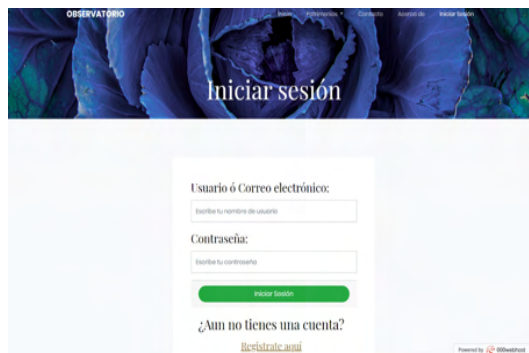


Figure 9 Login Access



Figure 10 Mobile application access screen



Figure 11 Start Menu



Figure 12 Asset Description

Once the location has been selected, with the help of Google Maps tools, the destination route can be marked by clicking on the buttons: 1. How to get there and 2.

Once the desired location has been selected, pressing the “View information” button will open a new screen in which information on the selected place can be viewed, such

as the location where it is located, weather, temperature, rainfall, and a small summary of the location. what it is and what is found in this place, as can be seen in Figure 15. In the “About (Figure 16)” section, you will find information on the purpose of the Information Center application.

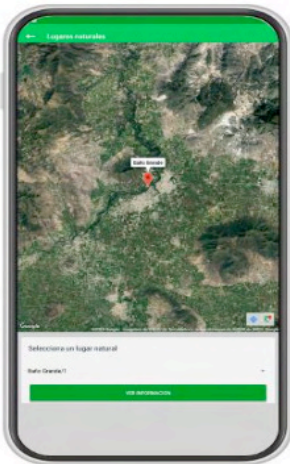


Figure 13 Access places

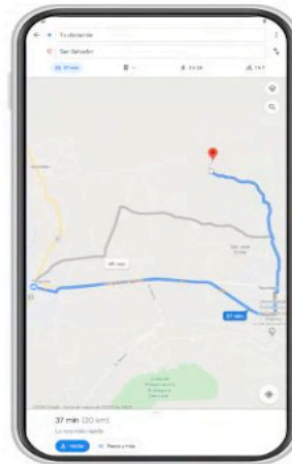


Figure 14 Route of places

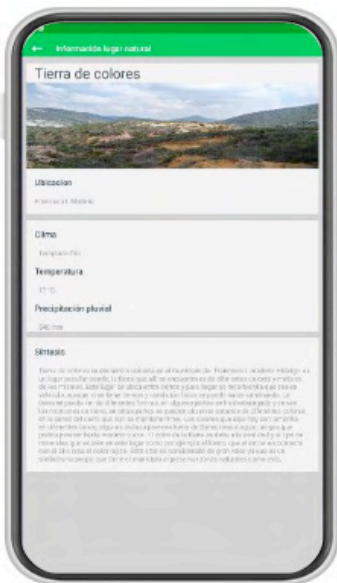


Figure 15 Site Description



Figure 16 Description of the Information Center

CONCLUSIONS

As mentioned, there is currently an information bias between heritage conservation experts and people in general; The latter being the ones that are in contact with places, whether natural or cultural, however, since the information does not usually approach people in general; Precisely one of the objectives of this Information Center is to be the link between these two great actors; using two of the IT tools such as the mobile application and the website, since they are tools that are, to a certain extent, affordable to society in general. This is supported by the data shown throughout the work, however, it is also necessary that in addition to using this link, it is essential to identify the places that can be considered heritage, as also stated above. Therefore, identification is the part in which IT plays a fundamental role, since people become participants in the selection of places through technology.

For this reason, this phase of the project is fundamental, since the more accessible the information is, and especially the IT interface of the Information Center, the easier it will be to use and provide feedback.

Based on this and the results obtained, as a direct consequence of the evaluation, an improvement was obtained in the interaction of the website and the mobile application, starting with the improvement of the quality of the development processes as well as the constant validation of the different modules that make them up, likewise, the management of resources was optimal since the changes were radical but in terms of the interface since the operation was still what the end user expected. Likewise, the risk processes of development were identified in order to offer the user truthful information and thus ensure the confidentiality, integrity and availability of the data handled in the technologies.

With the proper use of the mobile

application, it was possible to identify that the “Contact” section allows continuous updating and improvement of the modules, offering the Information Center the opportunity to provide useful data that favors the proper use of these places, promoting their adequate dissemination and maintenance by governmental and non-governmental organizations.

Finally, it must be noted that usability evaluation is a fundamental part of the software development approach, which allows innovating the functions and presentation of each interface to increase the knowledge of the interested parties about the interaction problems that have been detected.

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