
ICT AS A SUPPORT FOR THE CULTURAL PUBLIC HERITAGE: A DIGITIZATION PROJECT OF THE HISTORICAL ARCHIVE OF ARARANGUÁ-SC

AS TICS COMO SUPORTE AO PATRIMÔNIO PÚBLICO CULTURAL: PROJETO DE
DIGITALIZAÇÃO DO ACERVO DO ARQUIVO HISTÓRICO DO MUNICÍPIO DE
ARARANGUÁ-SC

LAS TICS COMO APOYO AL PATRIMONIO CULTURAL PÚBLICO: PROYECTO DE
DIGITALIZACIÓN DEL COLECCIÓN DEL ARCHIVO HISTÓRICO DEL MUNICIPIO DE
ARARANGUÁ-SC

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Submetido em: 19/04/2017

Aceito em: 15/09/2017

Publicado em: 21/11/2017



JITA: JH. Digital preservation.

RESUMO: A principal função das Tecnologias da Informação e Comunicação (TICs) diz respeito a favorecer a disseminação e compartilhamento da informação, por meio de ferramentas que auxiliem na comunicação de modo geral. Um ambiente que caracteriza e oportuniza este processo de comunicação entre pessoas, épocas e lugares, com base na informação que mantém em diversos formatos, é o Museu, ou Arquivo Histórico. No entanto, o que percebemos é que a visita ao museu não é mais a principal fonte de informações, lembrada no momento da pesquisa, e é neste contexto que as ditas TICs, podem contribuir. A aplicação de instrumentos e mecanismos computacionais no contexto museológico, não provoca só a modernização, mas busca facilitar a investigação e recolhimento de informações, além de assumir, sobretudo, uma posição de complemento ao museu, não de "competição", com o que nunca deixará de ser o ambiente de salvaguarda da história. Neste trabalho, buscou-se descrever o projeto e os processos de digitalização e disponibilização virtual do acervo histórico do município de Araranguá-SC e relatar suas consequências quanto à conservação e difusão do acervo digitalizado.

PALAVRAS-CHAVE: Acervo digital. Digitalização. Tecnologias da informação e comunicação.

ABSTRACT: The main function of Information and Communication Technologies (ICTs) is to promote the dissemination and sharing of information, through tools that aid communication in general. An environment that characterizes and facilitates this process of communication between people, times and places, based on the information it maintains in various formats, is the Museum, or Historical Archive. However, what we realize is that the visit to the museum is no longer the main source of information, remembered at the time of the research, and it is in this context that the said ICTs can contribute. The application of computational tools and mechanisms in the museological context, not only causes modernization, but also seeks to facilitate the investigation and gathering of information, besides assuming, above all, a position of complement to the museum, not of "competition", with which never will no longer be the safeguarding environment of history. This work aimed to describe the project and the processes of digitalization and virtual availability of the historical collection of the municipality of Araranguá-SC and report its consequences regarding the conservation and diffusion of the digitized collection.

KEYWORDS: Digital heritage. Digitization. Information and communication technologies.

RESUMEN: La principal función de las Tecnologías de la Información y la Comunicación (TIC) se refiere a favorecer la difusión y el intercambio de información a través de herramientas que ayuden en la comunicación en general. Un ambiente que caracteriza y oportuniza este proceso de comunicación entre personas, épocas y lugares, con base en la información que mantiene en diversos formatos, es el Museo, o Archivo Histórico. Sin embargo, lo que percibimos es que la visita al museo ya no es la principal fuente de información, recordada en el momento de la investigación, y es en este contexto que las dichas TIC, pueden contribuir. La aplicación de instrumentos y mecanismos computacionales en el contexto museológico, no provoca sólo la modernización, sino que busca facilitar la investigación y recogida de informaciones, además de asumir, sobre todo, una posición de complemento al museo, no de "competencia", con lo que nunca dejará de ser el ambiente de salvaguarda de la historia. En este trabajo, se buscó describir el proyecto y los procesos de digitalización y puesta a disposición virtual del acervo histórico del municipio de Araranguá-SC y relatar sus consecuencias en la conservación y difusión del acervo digitalizado.

PALABRAS CLAVE: Colección digital. Digitalización. Tecnologías de la información y la comunicación.

1 INTRODUCTION

The historical material grows with each new event recorded. However, museums and archives alone cannot compete with the informational density that the Internet and other information and communication tools provide. The interaction with a virtual exhibition, its sharing and ease of access, may seem more attractive, and is increasingly simple and intuitive to handle with.

The good implementation of these tools can, above all, provide a complement to the physical Museum. Through virtual exhibitions and making available additional information about the contents of the Museum, it is possible to provide different means of access to these materials. In more extreme situations, which may result in risk to the integrity of the property (for example, materials that need restoration or is stored in isolation as a preventive preservation), access by the population may be impaired or prevented. In such circumstances, Information and Communication Technology (ICT) also has the potential to serve as a bridge. However, as with any technology, if poorly implemented, it can become another barrier between the user and the equity.

These access and sharing technologies bring the possibility of widespread dissemination and easy propagation of the heritage of museums, historical archives, cultural centers and exhibitions, whether temporary or permanent. Through the perception of this fascinating and accelerated development of technology and motivation, several public spaces abroad, and within Brazil, have been adapting themselves to the use of computer tools. Its effectiveness is able to make accessible information related to the context in which they present themselves. Museums and cultural centers use these tools not only in the creation of informative web sites about their exhibitions, but also as a means of exchanging information among experts and "nonprofessional" visitors. In addition, as an alternative mean of publicizing, the project is developed. The good implementation of these tools, above all, provide a complement to the physical museum, by virtual exhibitions, providing additional information about the museum's contents. Different forms of access to materials that are protected in restoration or kept in a reserved area, for preventive preservation, among many other situations, could result in risk to the patrimony and difficulty of access, by the population.

This article aims to present the digitization and availability project of Arquivo Histórico do Centro Cultural, from Araranguá's city, located at the southern end of Santa Catarina state. Developed in an interdisciplinary way, which searches to preserve and disseminate the collection of the cultural center, composed of more than 3,000 photographs and more than 5,000 documents, donated by Universidade Federal de Santa Catarina (UFSC), through an extension project, submitted to Bolsa Cultura. Here are reported the consequences of this virtual availability, as well as its preservation and diffusion, as well as the divulgation of the cultural heritage of the historical museum, aimed at attracting interest in visiting the virtual museum and influencing the visit to the physical museum (the real one).

In order to reach this objective, we pursued theoretical basis in the literature, and in the

guidance of specialists, responsible for the project, who followed their development, both in regard to Information and Communication Technology (ICT) tools, methodologies and good practices in museums and historical archives.

The scanning project of the Historical Archive of Araranguá's city was structured in two stages, in order to organize and digitize the photographic images, and then, the loose documents. These do not belong to any book, newspaper or magazine existing in the Historical Archive, consisting of photographs, books, newspapers, magazines and other documents, which illustrate the memory of the city and its surroundings.

In order to map out the circumstances of the environment as a whole, the Archive of the Cultural Center was initially submitted to an incipient condition assessment to outline the action plan. Subsequently, the project began to be implemented and developed, in which a large part of the collection was digitally organized, digitized and reformed. After the steps of analysis, organization, digitalization, restoration and cataloging, this digital collection was made available in a terminal belonging to the Cultural Center itself. Then, as a way to increase its spread, the digitized collection was integrated with an information kiosk, called Digital Totem. Finally, it was concluded that a web platform, called Digital Memories of Araranguá, was made available, an environment that assumed the role of extension of the Museum and the Historical Archive of the municipality.

2 CONTEXTUALIZATION

Araranguá's Historical Archive is part of Centro Cultural Artesã Máxima Astrogilda de Souza, which also houses Araranguá's culture department, now called Culture Secretariat, and Araranguá's historical museum. Currently, the cultural center is located in a building constructed by Banco Nacional do Comércio S.A, later used by Banco Sul Brasileiro S.A and Banco Meridional S.A, a memorable historical monument for the Araranguaenses. Built in the 1940s, acquired by the city of Araranguá in 1997 and inaugurated in mid-May 2000 (DEPARTMENT OF CULTURE, 2015).

After 2005, the organization and treatment of this collection belonging to the Historical Archives started receiving priority in the actions of the Municipality of Araranguá, which, through regional partnerships with educational institutions, provided a pre-organization of part of this material. The archive of the Historical Archive, basically consisting of old documents of the municipality, collections of newspapers, and various photos of the municipality and surrounding areas, is available for visit, consultation and research by the community. Since its inauguration, all the material donated by the city hall and citizens has been gathered in a small room of the building. However, only 5% of the photographic collection was digitalized and, therefore, accessible on the Cultural Center computer.

Through the project "Digitization of the Archive of the Historic Archive of Araranguá's county" that the checking of the organization of all photographic images and some of the loose documents took place. After adjusting them according to a series of norms indicated and adapted

by the experts involved in the project, the process of digitizing started and, finally, they are available in digital format.

3 THE PROJECT

The project for the digitization of the Historical Archives of Araranguá took place in two parts. They both were coordinated by professor Dr. Paulo Cesar Leite Esteves, with the participation of the scholarship holders Gabrielli Ciasca Veloso, Mariana dos Reis Martins and Gisele Fortunato Martins, bachelor's degree in Information and Communication Technologies (ICT) at UFSC, together with the director of Araranguá's Centro Cultural Artesã Máxima Astrogilda de Souza, the current director of the Historical Archive, Daniel Vieira. The purpose of this project was to digitize the photographic and documentary collection of Araranguá's Historical Archive, to promote the preservation of its heritage. The idea was not to deprive the public the access to this collection, but to stimulate getting to know it, in a dynamic, attractive and interesting way, by use of ICT, both in the digitization process, and in the availability and dissemination method.

After the participants cooperated with the archive, it was necessary to segment the project in two phases, in order to organize, standardize and digitize as much material as possible, since it has a large volume of both documents and photographs. In the first phase of the project, which lasted from November 2011 to October 2012, the photographic images were selected, including all images belonging to the archive until August 31, 2012. These were properly organized and digitalized to the project, where each photograph was registered according to its legend, which maintained a correspondence between the physical and the virtual material, that is, the cataloging and virtual organization were replicated in the shelves where the physical material is stored. The second phase of the digitization project was directed to the organization, standardization and digitization of the collection of loose documents, which did not have any type of digital representation, and was previously organized by subject. This second and final phase took place from March 2013 to February 2014, also in accordance with the guidelines of cataloging and creation of subtitles, as ratified in the description of the previous phase (VELOSO, 2015).

To provide better dissemination condition, handling the collection and progress of the processes, the project was structured to organize and digitize documents and images in the Historical Archive of the city in four stages: Analysis, identification and organization; Digitization and Restoration; Cataloging; and finally, the Provision of the collection. All the steps and their specificities are described in the project's methodology section.

4 METODOLOGY OF THE PROJECT

After the initial moment of diagnosis and apprehension of the conditions and limitations of the records of the Historical Archive, the project developed within the stages described as follow.

4.1. Analysis, Identification and Organization of the Collection

The entire photographic collection consisting of 3,670 photographs and 5,165 loose documents, which compose the collection of the Historical Archive, were individually analyzed and organized, according to the subject identified in each material. As historical preservation techniques recommend, gloves and masks (surgical, non-sterile) were used during the handling of photographs, as well as other documents. In many cases, dedications or reminders written in the photographs have been found, since much of the collection comes from city people's donation. However, it was difficult to find information that could help with captioning and subject category segmentation, since what was written on the photograph, or paper wrapper, was not what the image actually represented. In different cases, these words or phrases eventually led to the confusion of what, in practice, could be only a rough draft or truthful information concerning to the photography. For this reason, some photographs were identified by comparison, with the help of the historian responsible for the Archive.

Initially, the state of the photographic and documentary collection was analyzed, which was in precarious conditions of conservation and storage. The collection was displayed on wooden shelves, material very vulnerable to termite contamination, and the environment had lack of adequate equipment (dehumidifier) to ensure proper air quality. The room even did not have a door to isolate the outside environment, from the collection and from the staff of the cultural center.

Each photographic image or document was physically filled and wrapped in a sheet of white paper, with the information collected in the identification process, written with pencil, type 6B, to ensure that the photograph or document was not damaged by any trace of paint, but that information could still be easily read. Images of the same subject have been sequentially enveloped, and these covers are distributed in plastic boxes. As an initial part of the photographs was already in the process of scanning, classification and organization were constantly reviewed, in these files. The digital images, found on the Historical Archive's computer, were organized based on the same criteria and moved to a specific directory, where duplicate images and copies of physical photographs were removed. Note that this organization was restarted several times to accompany the constant inclusion of new elements in the collection.

The physical photographic collection is separated and stored in 53 labeled folders, according to the subjects identified in the photographs. These folders are grouped and stored in a total of eight (8) boxes. The final arrangement was according to the volume, to better pack them without wasting space and avoiding overloading. They were combined in the same folder boxes, completing the total available area. The ratio per box is described in Table 1:

TABLE 1. List of boxes and folders of photographs.

Boxes	Files
Box 01	Field; field of aviation; houses; Maurício Pereira architecture; photo contest landscape; construction; bandstand; demolition; floods; seaplane; Hospital Bom Pastor; industry; garden; public machinery; Maria Leofrísio; plants and maps; bridge; radio; Araranguá river.
Box 02	Politics - Manoel Mota.
Box 03	Old town; truck; car; cities; boats; sport; railroad; recreation; agricultural machinery; monuments; bus; archaeological site.
Box 04	Crafts; Luiz Delfino Public Library; schools; Independence Day events; Genaro Salvador; churches.
Box 05	Bernardino de Senna Campos; events; indigenous peoples.
Box 06	Cultural events.
Box 07	Opening Season 1987 - 1988; spas; county band; Centro Cultural Máxima de Souza; movie theater; movies; museum; people.
Box 08	Post cards; religious events; aerial photos; sacred images; public roads.

Source: Authors of the research.

The Document Collection is separated and stored in 16 nominated folders, according to the subjects to which they refer, described in Table 2:

TABLE 2. Subjects relating to documents.

Subjects	Certificates	Generalities
	Matches - Miscellaneous	Real Estate Registration
	Matches - Expedited	Application - Tax Debt
	Matches - Received	Application - Certificates
	Matches - Various Telegrams	Application - Construction
	Correspondence - Telegrams Issued	Application - Miscellaneous
	Matches - Telegrams Received	Application - Transfer - Health Care
	Election Card	Application - Health Care - Construction

Source: Authors of the research.

Scanned documents can be found in "Certificates" and "Received correspondences" subject folders, belonging to the archive since the middle of January, 2014. Only in these two folders there is a collection of more than 6,000 items; however, given the large volume of documents and the restricted deadline, exactly 5,165 documents were submitted to the stages of this project.

4.2. Digitalization and collection restoration

After the process of organization, the digitization of the collection began, in which the few images already digitized were considered; however, because of the poor quality of resolution, these were scanned again, in the standards established in this project. The photographs and documents were scanned in resolution of 600 DPI (Dots Per Inch), with the exception of those with very small dimensions, smaller than 6cm² as average, in which the resolution was 1200 DPI.

The name of each file consists of a sequential number for each subject, followed by the

folder's name (which refers to the subject of the historical record), description of the place, date and people, if photographic records. The equipment used for the scanning was HP Scanjet 5590 digital desktop scanner, belonging to the cultural center itself. The digital files were saved on the Historical Archive's computer, and on two external hard drives, as a backup.

During the identification, organization, and under the supervision of the historian responsible for the archive, some simple restorations were carried out in the photographs, such as improper casing exchange, when the paper had pen writing or improper size, also the removal of glue and adhesive tape traces, with the use of scalpel. In the archives resulting from the digitization, it was observed the necessity of the digital restoration of some photographs, damaged by time and precarious storage. The digital restoration process began, which sought to improve image quality, digital removal of patches and folding marks without removing features that characterize the historical record, such as dedications written in the photographs. In this process of digital restoration there were used Adobe Photoshop and Microsoft Office Picture Manager softwares.

4.3. Cataloguing the collection

The photographs creation of the legend and the digital file's name is composed of eight (8) information. They are described in the following order: sequential number referred to the photograph, main subject, secondary subject, event, date, people in the image, photographer responsible for the registration and place registered. In several files some of the information was not available, either because there is no information or records in the photograph; or because it is not possible to identify them; or even because of lack of information or, finally, because of image damage.

Sequentially numbering the legend of each photograph starts each year, linked to each subject, of each box. That is, every box of each subject will have the first picture with the sequence number "001". For example: "266 Motorcycling Sport IV Km Motorcycle Racer 10- 02-1985 Arroio do Silva Bathhouse". The photographs' caption detailing is presented in Table 3.

TABLE 3. Composition of the caption of the photographs.

Photo caption composition	
Sequential number	266
Main subject	Sport
Secondary subject	Motorcycling
Event	IV Motorcycle Racer
Date	10-02-1985
People identified in the photo	Information not available
Photographer	Information not available
Place	Arroio do Silva bathhouse
Final Legend: "266 Motorcycling Sport IV Km Motorcycle Racer 10-02-1985 Arroio do Silva Bathhouse"	

Source: Authors of the research

The first two fields that make up the caption are required fields, that is, they are present in all captions of all the photos. The other fields will only be present in the legend when the information exists, according to the description of all the fields that make up the legend:

1st - sequential number referring to the photograph: this is for the photograph as an individual identifier inside the folder to which it belongs, a proper name, valid only when together with the other information of the legend, preceded by the description of the main subject identified in the photograph. This field is required in the digital file legend;

2nd - main subject identified in the photograph. This item is also described in all captions of digital files;

3rd - secondary subject identified in the photograph, when it exists and has the possibility of being clearly identified;

4th - description of the type, or name of the event represented in the photograph, when the information is available;

5th - date in which the photograph was taken, day, month and year, or only one of these, for example, only the year;

6th - people present in the image, when there is, and when you can identify and know the names of those present in the photograph;

7th - photographer responsible for the photograph;

8th - place represented in the image, such as street, neighborhood, city, state or country.

These last four elements: "Date", "People", "Photographer" and "Site", are rarer elements to be described, but can be found in the photograph itself, or through research discovery in other documents, or information about people related to the photography. As for loose documents, their captions (or names of digital files) are composed of four information, developed in the following order: year, sequential number, pages and sides of the document (front and back). The "Pages" field is only required when the document consists of more than one page. The "Document Sides" field is only required when the document has information on both sides. However, the first two fields that make up the caption are mandatory, that is, they are present in all captions of all documents, as described:

1st - year to which the document refers, preceded by the word "Year". For example: "Year 1983";

2nd - sequential number referring to the document: this is for the document as an individual identifier, a proper name, valid only when next to the other information, preceded by the word "Document". For example: "Document 001". The count of the sequential number of the legend of each document starts every year belonging to each subject of each box, that is, every box of each subject, will have the first document with the sequence number "001", as can be observed in the organization of the photographs;

3rd - number referring to the scanned page, mentioning the total number of pages of the document, preceded by the expression "Page x of y", when necessary, only in cases where the document has more than one single page. For example: "Page 1 of 2";

4th - in parentheses the description of "front" or "verse", when necessary, that is, only in cases where relevant historical material exists on both sides of the document. This should be disposed as the last item or, if the document contains "Page" information, it should be arranged

next to the current page number of the document. Consequently and inevitably, every document that has "verse" must have another digital document "front". For example: "Page 1 (verse) of 2" and "Page 1 (front) of 2", or "(verse)" and "(front)", as described in Table 4.

TABLE 4. Examples of legend of documents.

Examples of legend	"Year 1983 - Document 001 - Page 1 (verse) of 2"
	"Year 1983 - Document 002 (front)"
	"Year 1983 - Document 003"

Source: Authors of the research

In this example, for the construction of the legend, there was no need to do research beyond the digitized material itself. The year information, page number, and document sides were analyzed in the document itself and added to the caption when needed.

4.4. Availability of the collection

Initially, the digitized material was exclusively available on the cultural center computer, arranged in the room of the director of the Historical Archive, which facilitated the site research and the search for specific material. However, after completing the project, through another UFSC project, the Digital Totem was designed and built, an information kiosk, was designed from recycled and donated hardware, destined for the digital heritage of the cultural center of Araranguá. This project promotes the technological interaction of local history with the visitors of the historical museum, through simple hardware and with the support of the storage of information such as historical museum data, general records, documents, materials, maps, among other multimedia elements. That is an important multimedia application, which aims to be a tool for exposing cultural heritage assets, in a digitalized and virtual way, developed under the supervision of university professors, undergraduate students and scholarship holders of the project. The totem hardware is the result of recycled and donated material, with the intention of giving the project a character not only sociocultural, but also ecological.

In order to provide the interaction of these two projects - digitization of the collection (content), and physical construction of the totem (platform) - a third project arises, on integration of the digitized collection of the Historical Archive of Araranguá with the Digital Totem, with the intention to design and evaluate an interactive multimedia application model for Digital Totem. That is, to idealize, develop and evaluate a navigation interface for the Digital Totem and, through it, access the digital archive of the Historical Archive.

This third project: "Evaluation of Interactive Multimedia Applications for Information Kiosk: Digital Totem for the Historical Museum of Araranguá" (VELOSO, 2015), originated from the union of the two projects mentioned before, which were responsible for providing the content and the platform, respectively. In order to update the form of access to the cultural center's acquis, through the ICTs, this third project proposes to carry out the planning, elaboration and execution of a multimedia application model. Through an effective, efficient and satisfactory interaction within the main usability requirements, the Digital Totem was

Disponível em: <http://repositorio.ul.pt/handle/10451/3190>. Acesso em: 7 dez. 2017.

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