TRAVELLING CULTURE: DEFINE, IMPLEMENT, ENRICH AND DISSEMINATE THE DIGITAL CULTURAL HERITAGE. THE "DIGITXL PROJECT" CASE STUDY

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Summary

In the last decades, the digitalization of the cultural heritage has become actual, promoting not only the conservation of the most fragile artifacts but also the enjoyment of the cultural objects. The importance of increasing the digitalization process of cultural heritage has been confirmed during the critical times of the last two years. In order to provide a useful tool to catalogue, digitalize and enrich the document flows, an infrastructure to integrate, manage and display data and information from archives, museums and libraries is being studied and developed. One of the steps to be addressed to develop the GECA infrastructure consists in comparing and mapping the most used national and international descriptive standards adopted in archives, museums, and libraries. The standards mapping is key to developing new cataloguing data sheets, to ease the insertion of information also for those who are not professionals in the domain. To promote cultural enjoyment for every kind of target audience, cultural narratives could be developed, to encourage not only web search, but also an interaction with the cultural object. This study aims also to contribute at the creation and promotion of thematic routes that aggregate information from distinct domain of studies and provide for the cultural object to be perceived, experienced, and studied.

State of the art and goals

The process of digitizing cultural resources has been evolving for several years. There are many different conditions that encourage its development: digital consultation, for example, allows access to documentation physically preserved on the other side of the world; moreover, it promotes the preservation of cultural objects themselves, especially of the most fragile, whose physical consultation is impossible or strongly discouraged.

The need to enrich digital resources has been made even more evident following the COVID-19 pandemic: the concrete impossibility to study, consult and observe "live" any type of material stored in libraries, museums and archives highlighted the importance of making cultural heritage accessible and available to every type of user (Kolokytha & Rozgonyi, 2021).

This urgency also implies the need to implement and digitize the resources currently available only through consultation, using standardized descriptive criteria as complete and detailed as possible, to guarantee through the study of the "virtual" item the same quality (or superior) provided by the "real" consultation of a cultural object (Sweetser & Orchard, 2019).

In order to provide a useful tool to catalogue, digitalize and enrich document flows, an infrastructure to integrate, manage and display data and information from archives, museums and libraries is being studied and developed.

One of the steps to be addressed to develop the GECA infrastructure (GECA 3.0, Manage integrated resources, 2022), realized by CNR IMATI, consists in comparing and mapping the most used national and international descriptive standards adopted in archives, museums, and libraries. Currently, the bibliography on the realization of a complete, updated and/or freely available mapping among the main descriptive standards is rather sparse or dated (Assumpção & da Costa Santos, 2015; Jakšić, 2004). For example, in the Tag Library of the EAD3 standard a partial mapping between the ISAD(G) - EAD3 and MARC21 - EAD3 standards is reported. Instead, a mapping between EAD3 and UNIMARC is totally missing, since these are standards of American and European origin respectively (EAD Tag Library, 2019). Moreover, the conversion sheets from UNIMARC to MARC21, made available by the Library of Congress, are currently at version 3.0, dated to August 2001 (UNIMARC to MARC 21

Conversion Specifications, 2001), despite the standards being updated respectively to the 3rd edition in 2008 (IFLA & Hopkinson, 2008) and Update No. 33 in 2021 (MARC 21 Format for Bibliographic Data, 2021).

The purpose of the mapping is to describe the digitalised objects in a lingua franca, allowing the interchange of data between standards. The standards mapping is key to developing new cataloguing data sheets, to ease the insertion of information also for those who are not professionals in the domain (as opposed to archivists, librarians, museum cataloguers) and to support complex thematic routes which need to integrate information coming from separated domains.

To avoid confining the digital cultural heritage in a digital "limbo" known only by researchers and scholars, it is necessary to approach every kind of target audience, for example even the fans and the simply curious ones. This process could be implemented through the development of cultural narratives that encourage not only web search, but also an interaction with the cultural object.

This is exemplified in the work undertaken by Nanyang Technological University in Singapore with a project of engineering historical memory and interactive exploration of archival documents (Nanetti & Benvenuti, 2021). In this way, digital documents are no longer just a "digital reproduction" that replaces the original for preservation, dissemination, and fruition reasons, but become a tool for deepening and amplifying the meaning and content of the original itself (Campagnolo, 2020; Turbanti, 2021).

This study aims also to contribute at the creation and promotion of thematic routes that provide for the cultural object to be perceived, experienced, and studied. The thematic routes allow the management, the visualization and the fruition of the information coming from the three different domains, with the possibility to integrate them with other information or multimedia materials external to the platform (audio, video, images). Eventually, the various search paths and routes should support a range of experiences and cater for different users' needs and interests as well as personalised ways to relate to the cultural heritage and learn more about it or its context.

Methods and Tools

First, an analysis of the main national and international standards and guidelines used in the domain of cultural heritage (libraries, archives, and museums) was carried out. Were analyzed the standards created by authoritative bodies in the sector (i.e., bibliographic domain: IFLA, Library of Congress; archival domain: ICA, SAA; museum domain: Getty Institute, ICCD), the most used and recognized by the reference communities.

Subsequently, based on the needs of the DigitXL Project and the metadata provided by the various bodies, a choice was made on the standards to be used and custom cards were developed for entering the metadata manually or through import. The resulting (meta)data model is the backbone of the GECA system and pivotal to deal with multi-domains thematic routes that provide for the cultural object to be perceived, experienced, and studied.

DigitXL Project

The DigitXL Project, promoted within the agreement of scientific collaboration between the Department of Social Sciences and Humanities, Cultural Heritage of the National Research Council (CNR-DSU) and the National Academy of Sciences called the XL (Accademia Nazionale delle Scienze detta dei XL, 2016), consists of a census of the scientific writings produced by the academic members during the history of the Academy, in their bibliographical description, digitalisation with criteria and modalities based on advanced technological standards to enable consultation on the web. The collection and publication in digital critical edition of this heritage is an opportunity to offer to an extremely large and diverse public a collection of works and authors of the highest quality for the history of science.

The GECA infrastructure for the project represents the management tool of the online digital edition of the works of the members of the National Academy of Sciences, starting from the initial nucleus of 40 scientists who founded the association in 1782. The initiative has started with the development of the pilot project "Novum Corpus

Fontanianum", focused on the figure of the scientist and naturalist Felice Fontana, one of the first members of the Academy of Sciences called XL, as well as founder and first director of the Museum of Sciences in Florence.

The pilot project, lasting 24 months and to which CNR-IMATI, CNR-DSU and the Academy of Sciences called the XL are working, was divided into 7 main phases:

1. Research of archival, bibliographic and museum resources;
2. Inventory and bibliographic descriptions;
3. Digitizations;
4. GECA infrastructure customization;
5. GECA infrastructure population;
6. Design of the Felice Fontana website;
7. Construction and population of the Felice Fontana website.

During the early stages of the project, it is proposed to conduct a census of the bibliographic and archival material, as well as the scientific instrumentation related to the naturalist Felice Fontana (1735-1805), one of the first members of the National Academy of Sciences called the XL and founder of the Museum of Sciences in Florence (Museo Galileo, 2022). These materials, present in various locations and conservation institutes, were described and digitalized with homogenous criteria and according to updated standards, and will be managed by the upper mentioned infrastructure and shared on web. Among the national and international cultural institutions that took part in the project, through collaborations and agreements with the Accademia dei XL, there are, for example, the Archive of the Accademia degli Agiati, the Civic Library and the Rosminiana Library of Rovereto, the Municipal Library of Trento, the Galileo Museum of Florence, the University Library of Leiden, the Municipal Archive of Reims and many others. The adopted descriptive reference standards for the management of cultural materials are UNIMARC (IFLA & Hopkinson, 2008), MARC21 (MARC 21 Format for Bibliographic Data, 2021) and ISBD (IFLA, 2011) for the bibliographic domain, ISAD (International Council on Archives, 1999), ISAAR (International Council on Archives, 2003) and EAD (Society of American Archivists, 2019) for the archival domain, ICCD (Istituto Centrale per il Catalogo e la Documentazione, 2022) for the museum domain.

With the Fontana project it was possible to highlight and understand the critical issues and the circumstances of improvement for the use of GECA. The DigitXL project, in fact, provides a context to evaluate GECA's versatility in providing the user with an integrated and homogeneous view of the resource description cards.
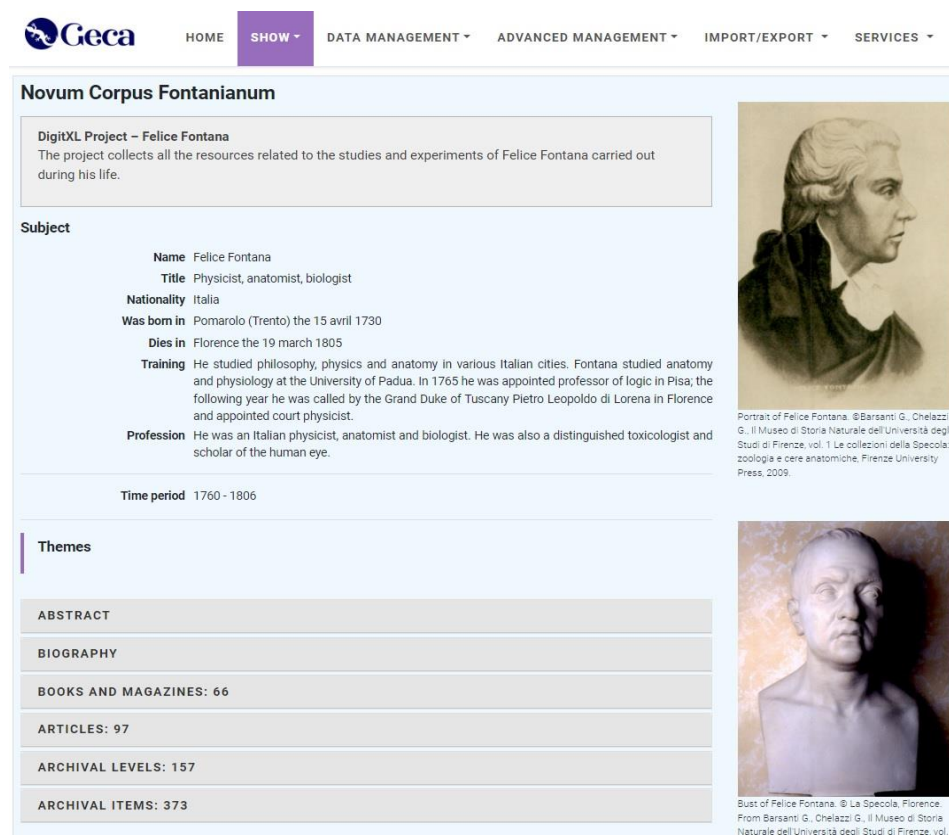
In addition to the sheets for the cataloguing of archival, bibliographical and museum resources, an additional card with a dual function has been designed:

- aggregate all the resources of the DigitXL Project in a single virtual container, functional to the development of the project website;
- enhancing the heritage relating to the figure of Felice Fontana, through the implementation of specific thematic paths.

All the cards made for the Fontana project, therefore, have been collected in a project called "Novum Corpus Fontanianum. DigitXL Project - Felice Fontana". At the same time, with the aim of recounting the figure of Felice Fontana and describing, more generally, the DigitXL project, six thematic paths were suggested (GECA 3.0, Themed routes/projects/stories, 2022). For each of them, information has been provided, both in Italian and in English, on the figure of Felice Fontana, on the issues dealt with in the specific path and on the chronological arc that concerns the heritage enclosed in it. In each route, moreover, there are cover images with caption, aimed at describing in a graphic and concise way the theme proposed. As shown in figures 1 and 2, each route collects links to the cultural resources, divided by type, belonging to a specific theme or, in general, to the project Novum Corpus Fontanianum. To consult the resource of interest, just click on the arrow next to the title to be redirected to the cultural object's cataloguing card. It is worth noting how the routes build upon information coming from different

fields of knowledge, for example, bibliographic data, such as the scientific articles written by Fontana over the years (figure 2) and archival data, such as notes, memorials and correspondence sent and received (figure 3).

The project, still in progress, is currently between the fifth and the sixth phase: specifically, the population of the GECA platform with the available resources is being completed, while the website dedicated to Felice Fontana is under construction.

Figure 1. Preview of the thematic route containing all the materials related to the pilot project "Novum Corpus Fontanianum".

Figure 2. Detail of the drop-down menu containing the articles (bibliographic domain) linked to the thematic route. To consult the resource of interest, just click on the arrow next to the title to be redirected to the cultural object's cataloguing card.

Figure 3. Detail of the drop-down menu containing the items (archival domain) linked to the thematic route. To consult the resource of interest, just click on the arrow next to the title to be redirected to the cultural object's cataloguing card.

The project will end with the population and visualization of resources on a portal dedicated to Felice Fontana, which will be connected to the GECA infrastructure. This tool will be designed on a platform and CMS open source, in order to aggregate a wide spectrum of content and information services and offer them to users according to a defined organizational model, ensuring access, making research efficient, facilitating and guiding the navigation and exploration of resources.

Acknowledgment

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