

Presentation of application SINAPSI

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ABSTRACT

Sinapsi flexibly meets standards' requirements. The participation aims to show how standard archival rules in terms of description and structure can cohabit with potential additional information useful for a better and more complete description

Presentazione dell'applicativo SINAPSI

SINTESI

Sinapsi, per rispondere in maniera flessibile alle esigenze degli standard. L'intervento mira a dimostrare la convivenza delle regole archivistiche di descrizione e di struttura con la potenzialità di informazioni aggiuntive utili ad una migliore e più completa descrizione.

Predstavitev aplikacije SINAPSI

IZVLEČEK

Sinapsi je aplikacija, ki se fleksibilno prilagaja zahtevam arhivskih standardov. Prispevek predstavlja možnost združevanja arhivskih pravili, ki se nanašajo na popisovanje in strukturo, s potencialnimi dodatnimi informacijami, ki so uporabne za boljše in popolnejše popisovanje.

Introduction

Changes in communication and knowledge building

Working in touch with most important national and international institutions, providing services in the framework of museums, archives and libraries has led to take part in a significant change in the management of cultural heritage thanks to the daily direct confrontation with these institutions.

The synthetic idea of this change consists in a different view of the basic and known conception: from the management of cultural heritage to knowledge management.

The "cultural good" is not anymore something to be only preserved and valorised but becomes a source for multiple information, which can be integrated, related and relatable.

The same "dynamic" cultural good provides the possibility do valorise the integrated fruition by more and more different and exigent users.

The approach has been moved from focusing on documents as the base for the search, to the definition of the document structuring based on the type of search we are expecting to be made by users. From the google search to the specialized researcher.

That is a further detail sustaining the management of the cultural heritage seen as a factor of knowledge and communication.

The role of the software application

Applications as systems for the management of simplified or advanced documentation schema and for the fruition on line of data and digital objects are primary tools for the valorisation of cultural heritage.

At present, there are many applications on the market. Some of them are proprietary applications some are open source.

The comparative analysis among applications in terms of specific use and in terms of the offered potentiality by proprietary application and open source application would be quite complicate a time consuming and would requires further insights according the treated sector.

In this document, it is important to underline that the decision to invest in the projecting of a new application is maturated starting from the context analysis where the aforementioned cultural change has played a fundamental role. The result of the analysis has been the request by “market” of a tool able to meet emerging change’s needs.

A possible innovation

The innovative focus consists in creating a synergy between the normative and specific standards (archivist, librarian, historical artistic, etc.) and the needs for a structuring and management of data deriving from documental sector.

Any cultural entity have different needs for the management of its own patrimony. The variety of documentation in public or private archives (documents, photos, videos, audio files, drawings etc.) is the very richness and at the same time, will define its peculiar connotation.

The main Sinapsi’s innovation consists in meeting cultural realities in combining scientific accuracy and structuring flexibility, deep data analysis a dynamic vision of complex patrimonies.

From the very first moment, this innovation has been shared and debated with some of the most authoritative interlocutors in the sector of document management.

DigiLab, interdepartmental centre in the Rome University “La Sapienza”, coordinates and develops designing activities and carrying out of systems for the valorisation, scientific communication and the built of learning methods. Digilab has signed a convention with Gap and Copat aimed at implementing the scientific research, analysis, study, evaluation and experimentation of an innovative application, if compared with market standards, able to manage data, metadata and alleged digital objects.

In a recent meeting held in Roman University “la Sapienza”, the interest for Sinapsi in the framework of the university research has been strongly underlined above all for some main features:

- It’s a web based application particularly adapted to the development of multi-standard systems aimed at integrating descriptive information and services for communication
- It provides a flexible and dynamic environment able to meet informative richness’ needs required by researchers and professionals but at the same time able to define guiding templates and interchange processes with existing informative systems:
- It has been proved suitable in a multidisciplinary didactic environment, in the technical-scientific cooperation and in the creation of communities dedicated to experimentation including developments aimed at the creation of a platform for long term conservation.
- It’s an application which can be easily integrated with controlled vocabularies and multidisciplinary indexing systems

The architecture

During the implementation of Sinapsi's architecture, the first aim has been to establish features to build. Among these features, some of the main ones:

Flexibility and extensibility:

- Schema management, free or predefined (standard)
- Dynamic definition of relations: generic/basic connections or specific ones between records and digital objects
- Immediate access and use. No third party installation needed (just browser and internet connection) in order to manage the application

The application is developed on five logical and functional levels.

1. Web Browser: It's the user interface of the application. From the point of view of the user it is the only part of the application which directly interacts with the user
2. Java Web Server: It's the Java EE container in which the application works. Generally it coincides with an application Server at least implementing Java Servlet features (for example Apache Tomcat)
3. UI Vaadin Component: It's a set of programmable components (serve site) through simple Java language, in relation with a Widget (a graphic component) on the Web Browser.
4. Java Application: It's the applicative section which executes elaborations and interfaces on one side the Web browser and on the other side the Database and the file system where information are stored.
5. DB-Web Services: It's a set of components and products where application data are stored: images, users, videos etc.

The choice of new technologies

The applicative features of Sinapsi are oriented towards a graph database model (neo4j) with the intent to implement a graph model viewer providing tools to view and manage in a dynamic way the built relationship for a natural consequential opening to the semantic search.

Second part

The designing commitment

The commitment for the carrying out of the application "Sinapsi" is more than a technical commitment and has to be seen broadening our view. According to the above mentioned considerations, the development of a software application, in our companies, coincides with a research activity and strategic development in the framework of valorisation and fruition of cultural patrimony in a wider way. The goal is to pay most attention on the evolution of the conception of the relationship between cultural heritage and technology innovation.

A project is a summon of correlated activities aimed to create paths and/or products or to carry out services meeting specific and precise targets.

The definition of the first and main target has been, as already abovementioned, to reach an extreme flexibility in the data structuring and in their relationships, without renouncing to the standards of the sectors.

The complex of correlated activities is the second distinctive factor of the project. Technical development has been immediately accompanied by other activities such as experimentation, learning, methodological critical analysis through synergies and expert advices.

The essential part of the Sinapsi architecture is its natural evolution.

The application is "ready for use" but at the same time ready to be naturally developed using its own structure and back office in the framework of a single disciplinary environment or towards different and multidisciplinary environments.

Further, Sinapsi is naturally placed in an international horizon. Either for developing described features or to make them sustainable, a feasible horizon can be given only by:

- Adoption of international standards
- Translation of the application
- Confrontation and comparison with international experiences

Here, some of the projects and horizons we are committing in and that we want deeply develop:

OPEN and LINKED DATA

The Open data manual edited by “Open Knowledge Foundation Italia” stress as main important aspects:

- The availability and access: data have to be available in their complex [...]. Data have to be available in a useful and modifiable format
- Data reuse and redistribution: Data have to be provided ready for use and reuse. This means the possibility to combine data with other database
- Universal participation: anyone must have the technical possibility to use, reuse and distribute these data.

The importance to sharply define the meaning of “open” and the reason to use this definition can be identified in a single term: Interoperability.

In this scenario, Sinapsi’s target is to represent an application whose main features are maximum flexibility and usability in the data management in order guarantee the wider interoperability. In particular, the intent is to give possibility for predefined dataset importation, data manipulation and elaboration of new dataset, such as the creation of brand new dataset.

THE CONNECTION TO SEMANTIC WEB

The evolution of web technologies is giving more and more importance to search and exploring tools based on the inner knowledge of the documental collection and on its formal representation. The evolution of semantic web (and of tools based on it) has the goal to explicitly represent and make available the relationship which semantically connects resources.

Sinapsi will be developed using semantic technologies and ontologies strictly based on standards for the semantic web (RDF, SKOS, OWL). In particular, the significant evolution is correlated with the aim to provide a multidimensional facet-based graphic navigation.

Through this type of navigation (facet-based), or however through a graphic navigation of the elements which compose the ontology it is possible to navigate “query less”. In this way it is possible to provide a more engaging modality to explore the archive and the user feels the dataset richness and the presence of elements he did not expect. It is possible to navigate a graph representative of the connections among resources and informative contents and to interactively explore it, or simply pose them in timeline or in a map.

PERSONAL DIGITAL ARCHIVING

A natural direction for Sinapsi’s designing development is the elaboration of a methodology and operative solutions which can be exportable in different contexts. The aim is to provide a tool for the single user or for small institutional realities to easy use the application thanks to a personalization of the profile and taking advantages by an application which can provide a personal digital archiving.

THIRD PART

The network building

Sinapsi is a naturally “in network” application. A network opened to membership and experimentations. The horizon to pursue is the effective constitution of a network among cultural institutions and private entities. A pursuable model is the so called “network contract”. Here some main features:

It's an agreement among entrepreneurs who commit themselves in order to improve individually (their own company) and collectively (the network companies) their innovative capacity and their competitiveness on the market. In order to reach these targets, companies share and sign a common program which synthetically “constrains” companies:

- to collaborate in predetermined environments connected to their company profile
- to exchange information or industrial, commercial technical services
- to commonly practicing one or more activities connected to their company profile

The specific law rules that the network contract can be signed by “more entrepreneurs”

Contractors can be entrepreneurs independently by their “company's” nature (individual companies and public or mixed companies can be included). Public entities whose scope is not commercial or however not profit entities can be summoned in a network contract. This model is a possibility and not definitive. What we could like to stress in this context is the potentiality insight the project Sinapsi. A potentiality which includes a construction of dialogue and synergy among institutions and private as these features reside, since the beginning, in the application and in the project. This feature seems to be the perfect answer to the more and more present requirement in terms of communication and communication sharing.

SUMMARY

The “Sinapsi” application is the result of the collaboration between GAP and COPAT, companies that have always been committing in the management, usability and valorization of cultural heritage. Sinapsi is a completely web-based system, absolutely innovative if compared with standard applications proposed by the market for data and data structures management, metadata, and digital resources in connection therewith. The innovative *focus* consist in having created the synergy between the compliance need with standard data structures (in archival sector, librarian, artistic, museum, etc..) and the requirements needed by data management in the documental sector. Any cultural reality has specific requirements for the management and presentation of its assets. The documental heterogeneity of the public or private archives (documents, photographs, audio or video documents, drawings, etc..) is the richness which will be more and more, over time, the peculiar connotation too. Sinapsi is designed to meet the needs of cultural realities combining scientific accuracy and flexibility in the structure creation with data analyticity and dynamic vision of complex patrimonies. Sinapsi catches the change taking place in the conception of the cultural heritage management, which is no longer treated as a good only, but, according to the appropriate methodology, as a source of multiple, integrated and interrelated information. The very native dynamism of the cultural heritage provides the possibility of valorization and utilization by increasingly diverse and demanding users. In particular the system allows *extreme flexibility* in structuring data through the use of specific standardized or customized *templates*, provides tools and functions to manage horizontal, hierarchical and semantic multi-relations, combines data access with the usability of the images. In other words it combines in a single application most of the possibilities offered by a *documental software* and by a *digital theca*. The extreme adaptability of the application is supported by the choice of using a Graph Database that can either facilitate future data restructurings and implementations or adapt itself to semantics specificities. Digilab, research and service interdepartmental center of the University of Rome “La Sapienza” has signed a specific agreement for the testing of Sinapsi application on specific, heterogeneous and complex archives, under the supervision of Prof. Mariella Guercio.

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