Digital Pompidou

Emmanuelle Bermès

Following the user's flow in the Digital Pompidou

Emmanuelle Bermès

Seit 2007 verfolgt das Centre Pompidou, eines der bedeutendsten Museen für zeitgenössische Kunst in Paris, eine neue digitale Strategie, um online verfügbaren Content weltweit abrufbar zu machen: das Digitale Centre Pompidou. Diese Plattform erlaubt den Zugriff auf die gesamte digitale Produktion des Museums sowie der ihm angegliederten Einrichtungen über einen einzelnen Sucheinstieg. Der innovative auf Hypertexten basierende Ansatz beschert dem Besucher der Plattform oft unerwartete Entdeckungen und war das Resultat einer intensiven Auseinandersetzung mit dem Nutzerverhalten, möglich wurde er durch den Einsatz von Semantic-Web-Technologie. In Zukunft sollen die Nutzer der Seite noch stärker eingebunden werden, damit sie den Content auch inhaltlich mitgestalten können.

Since 2007, the Centre Pompidou, the major modern art museum in Paris, has been developing a new digital strategy aimed at providing a global platform for online digital content: the Digital Centre Pompidou. This platform provides access via a single entry point to the whole digital production of the organization and associated institutions. The combination of Semantic Web technologies and intensive research on end-user interface issues has resulted in an innovative approach to digital content based on hypertextual navigation which favours serendipity and unpredicted discoveries. Future evolutions of the platform also include involving users in constructing the meaning or semantics of the content.

Since 2007, the Centre Pompidou, the major modern art museum in Paris, has been developing a new digital strategy aimed at providing a global platform for online digital content: the Centre Pompidou Virtuel, which could literally translate as »Virtual Pompidou Center« or more accurately »Digital Centre Pompidou«[1]. This platform provides access via a single entry point to the whole digital production of the organization and associated institutions: digitized works of art, documents about art and art history, videos and podcasts, archival material, library books records, etc. The goal of the project was to make the online presence of the Centre Pompidou focus on the content rather than being just an institutional showcase mainly targeting physical visitors of the building in Paris. On the contrary, the Pompidou website is now a reference online tool for anyone interested in modern and contemporary arts, or in the humanities in general.

Hence the Digital Pompidou is not about providing a virtual experience that would try to copy the onsite experience for visitors in our exhibitions through an interface based on camera views like the Google Art Project. First of all, we wanted to emphasize the diversity of our cultural activity, which does not rely only on the museum, but also covers conferences, live shows, cinema screenings and other live events involving artists of all kind. Moreover, we are less interested in displaying what can already be seen than in revealing what is usually hidden. Among the 76.000 art

virtual experience can never replace the actual contact with art

access to the entire digital production of the organisation

works, that are part of our museum collection, only about 2.000 are actually exhibited in the Paris building, in the course of temporary exhibitions or presentations of the permanent collection. The rest is either on loan or deposit in other places all around the world, or stored in the museum's storeroom.

Finally, the Centre Pompidou remains convinced that a virtual experience can never replace the actual contact with works of arts, the emotional and sensible approach to our cultural heritage. We hope that making more content available online will unveil new possibilities, either by making a new range of people come to the museum, or by allowing the display of forgotten works that would not have been considered for exhibition had they not been digitized. These statements led the Centre Pompidou to the definition of a broader scope, defining the »virtual« experience as something completely different from what can be seen onsite. This experience is based on the ability of our web users to create their own flow of meaning, by following links and aggregating content according to their own interests.

Traditional editorial approaches of online development in museums lead to emphasize only those works or artists that are considered of main interest, which results in the prevalence of a mainstream culture above more alternative forms of creation. Following the long tail paradigm, artists that are already well-known tend to have a heavier presence on museum websites than others. The Centre Pompidou, on the other hand, is attached to its tradition of openness to new and alternative forms of arts and does not want to privilege a certain part of its collection, but rather empower unexpected discoveries and serendipity.

In order to do so, the Centre Pompidou has created an online platform aggregating a great diversity of content, starting from the digitized works, which are the backbone of the website, but also including documents and archival material related to those works and their creators. Most of these digital resources were not created purposely for the website, but rather reflect the actual day-to-day activity of the Centre since its creation in 1977. A large part of this content was actually already available on the former website, but was scattered and hardly accessible for a user without a thorough knowledge of information retrieval techniques. In order to allow the average user to benefit from these hidden treasures, the Centre Pom-

pidou adopted a semantic approach in the design of the new platform. The combination of Semantic Web technologies and an intense research on end user interface issues resulted in the creation of the Digital Centre Pompidou as it is today. But a lot of other possibilities are still waiting to be unveiled.

WHY SEMANTIC WEB TECHNOLOGIES?

One of the main challenges of the project lay in the creation of a global and common information space from data extracted from several databases which all have their own structure. We decided to adopt Semantic Web technologies in order to address this issue.

The Digital Centre Pompidou was created based on the aggregation of existing databases, which are used as management tools for the Centre's professionals in the course of their work. The main databases are:

➤ the museum collection, a database dedicated to the management of the works of art and their conservation; this database is based on a software shared with other French museums, called Videomuseum;

➤ the agenda, a database which describes all the events (exhibitions, conferences, workshops, visits, etc.) past, present and future;

➤ the library catalogues, based on traditional ILS systems (three library collections are aggregated in the Digital Centre Pompidou: Bibliothèque Kandinsky, Bibliothèque publique d'information (Bpi) and L'Institut de recherche et coordination acoustique/musique (Ircam));

➤ archives finding aids, both from the Centre Pompidou's institutional archive and from the Kandinsky library which holds several artists' funds;

➤ audiovisual databases, usually based on local tools;

➤ other databases holding biographical information, journal articles, learning resources, shop products, etc.

It was a major challenge to be able to aggregate data from all those databases into one common interface for the public to search and browse. The data is very heterogeneous, as some of it follows library standards (MARC, MODS and Dublin Core), some archival standards (EAD for archives), some an internal locally defined structure (museum and audiovisual material) and even part of this data relates to entities that are not documents by nature (events, persons, etc.) However, merging all this data reveals to be very interesting, as all those databases share common entities: For instance, if you are searching for Kandinsky, you might want to find his paintings, the exhibitions that have shown his works, his archives held by the Kandinsky

library, books and videos about him, photos of him in the archives, etc. All this information already exists in the different databases, but relating it in a consistent way still is a challenge.

In the course of the project, it was not our aim to change the habits and tools of the professionals, so the principle of having separate databases was no subject for discussions. Of course, a global change towards a digital-oriented purpose of the activity was needed and led to new practices such as requesting authorisation for online display when the content is copyrighted (which is almost always the case, as the Centre Pompidou preserves mainly art from the 20th and 21st centuries). Also, indexing the content of the resources was now necessary, as the idea of making those works accessible to the public at large also required different entry points from those used by professionals. However, besides these amendments to the way of describing things, very little change was induced by the project in terms of software or data models. The new digital platform had to use these databases as sources and aggregate and relate their content. As the data models were so different, the choice of Semantic Web technologies was almost natural.

Linked Data offers a powerful way of achieving interoperability between databases of heterogenous structure. In its final report [LLD XG 2011], the Library Linked Data incubator group emphasizes the relevance of these technologies for libraries, in particular in the perspective of interoperability across domains (libraries, archives, museums):

»The Linked Data approach offers significant advantages over current practices for creating and delivering library data while providing a natural extension to the collaborative sharing models historically employed by libraries. Linked Data and especially Linked Open Data is sharable, extensible, and easily re-usable. It supports multilingual functionality for data and user services, such as the labeling of concepts identified by language-agnostic URIs. These characteristics are inherent in the Linked Data standards and are supported by the use of Web-friendly identifiers for data and concepts. Resources can be described in collaboration with other libraries and linked to data contributed by other communities or even by individuals. Like the linking that takes place today between Web documents, Linked Data allows anyone to contribute unique expertise in a form that can be reused and recombined with the expertise of others. The use of identifiers allows diverse descriptions to refer to the same thing. Through rich linkages with complementary data from trusted sources, libraries can increase the value of their own data beyond the sum of their sources taken individually. [...]

Following the user's flow in the Digital Pompidou **69**

semantic approach

aggregation of existing databases

Library Linked Data incubator group

Linked Open Data is sharable, extensible, and easily re-usable

By using Linked Open Data, libraries will create an open, global pool of shared data that can be used and re-used to describe resources, with a limited amount of redundant effort compared with current cataloging processes.

use of URIs

The use of the Web and Web-based identifiers will make up-to-date resource descriptions directly citable by catalogers. The use of shared identifiers will allow them to pull together descriptions for resources outside their domain environment, across all cultural heritage datasets, and even from the Web at large. Catalogers will be able to concentrate their effort on their domain of local expertise, rather than having to re-create existing descriptions that have been already elaborated by others.

RDF ontology

History shows that all technologies are transitory, and the history of information technology suggests that specific data formats are especially short-lived. Linked Data describes the meaning of data (›semantics‹) separately from specific data structures (›syntax‹ or ›formats‹), with the result that Linked Data retains its meaning across changes of format. In this sense, Linked Data is more durable and robust than metadata formats that depend on a particular data structure.«

The principles of Linked Data are designed to be applied to the Web at large and across organizations, but they can also be fit for internal use within an institution or a company: this kind of use is usually referred to as »Linked Enterprise Data« [Wood, 2010]. »LED« is about applying Linked Data principles and technology within the information system in order to increase interoperability between its components. The four main principles of Linked Data are the following:

Linked Enterprise Data

➤ use URIs as names for things
➤ use HTTP URIs so that if someone looks up a URI he retrieves useful information
➤ when someone looks up a URI, provide useful information using standards (RDF, SPARQL)
➤ provide links to other datasets.

seamless information space

The goal of these rules is to provide to the end user a seamless information space where he can navigate from one resource to the other, following their URIs, without the need to have any knowledge of their structure or storage. This form of interoperability should allow different institutions to publish their databases without knowledge of the software used by others, just as the Web allows web pages and websites to communicate through hypertext regardless of where the pages lie and which content management systems are used.

This is exactly the kind of interoperability that we wanted to build within the Centre Pompidou in-

formation system. We wanted a system that would not enforce the data from the separate databases into one common structure, but would nevertheless make it possible to create links between the entities they share. As the museum professionals are very demanding in terms of data quality, we could not afford to lower the level of detail of the data by using only the smallest common denominator between the databases. The main advantage of the RDF model, with its triple structure and the use of URIs, is to bind together descriptions of entities of a great variety into a seamless data model.

THE DATA MODEL

The Digital Pompidou platform is based on an RDF core that binds together all the data from the different databases. They are thus expressed according to a common model using RDF and URIs. In order to handle this, an RDF ontology was created, based on a few main concepts: Work, Document, Person, Place, Collection, Event and Resource (see fig. 1).

The main concepts are designed to integrate data from the different sources: data from the museum mainly relates to Works, Persons and Collections. The Agenda provides information about Events but also the Places where they are located. Data from libraries and archives are aggregated around the concept of Document. Finally, audiovisual material is provided as Resources together with information about the content of videos and audio recordings (Persons who are speaking during the conferences, Works that are presented, etc.). Art content (works from the museum, recording of musical performances) is linked with event-based information (exhibitions, performances, conferences) and with other relevant resources (posters, photographs, books, archives, etc.) thus allowing to browse the website and discover all these resources in a serendipitous manner.

During this process, we learnt that it was quicker and easier to work with our own schema rather than to try to adapt existing vocabularies, none of which were completely fit for our purpose due to the diversity of our resources. However, this was possible only as long as we intended to use the data within our own system and not to redistribute it to partners or make it available as open linked data. If we were to do so, which is definitely part of our plan for this year, we would have to transform our local ontology into a standard one. Work has already been done in this field, in collaboration with a class of students in documentation.

We also learnt that creating links between databases is not a trivial task, even if they are owned by
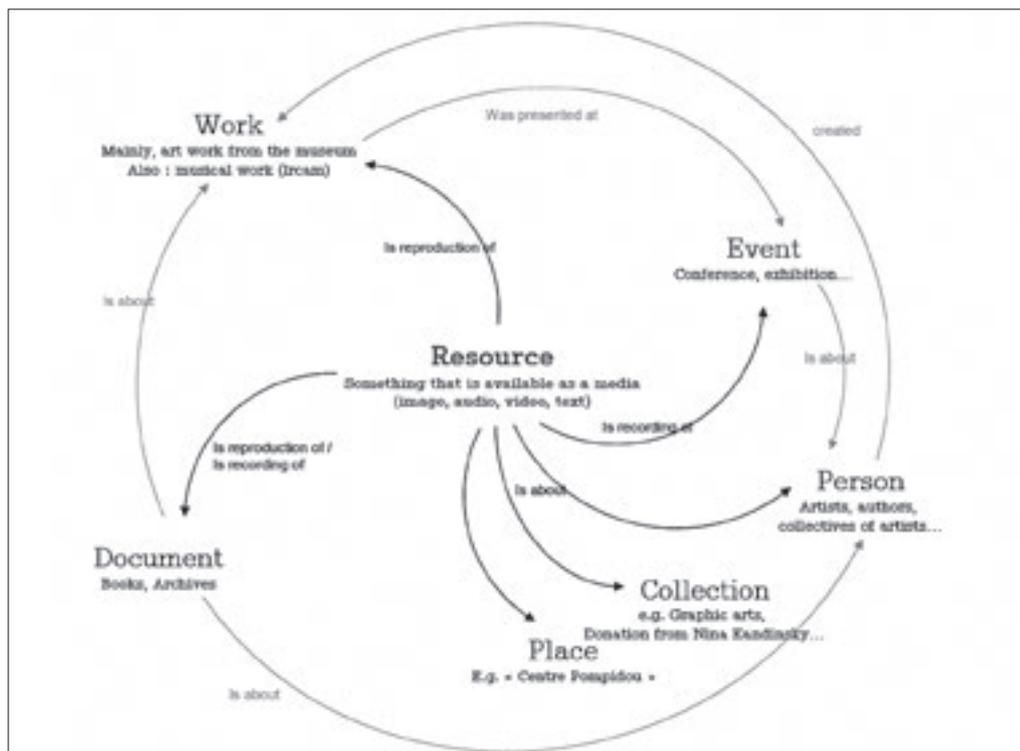
Fig. 1: Overview of the Digital Pompidou data model

the same institution and supposed to address similar topics. Entities such as Persons can be aligned using very simple keys such as »given name« plus »family name«. In most cases, the result is relevant because we are working on a narrow field of interest with little risk of ambiguity (there are, however, a few cases of homonyms). When it comes to Events or Works, challenges are different. Events often have very ambiguous names, and even when taking into account the event's dates, it is difficult to disambiguate for instance the name of an exhibition and a series of conferences around the same topic. Works also have ambiguous names, and if you consider the collections from the Photography or Graphic Arts services, »sans titre« is probably the most frequent title in the database …

Moreover, those alignments have to be recreated each time the data is updated in the system, a process that happens every night for most of the data, as the website displays information that requires frequent updates (ongoing events, data about people, right owners, etc.). Hence, even if we were able to edit manually the alignments, in order to disambiguate false positives for instance, the editing would be over-written by the next nightly update when the new source data comes in and erases the existing one.

In order to solve this issue, we worked to cross the identifiers from the different databases directly in the source databases. For instance, the Audiovisual database has been enriched with a new data element which is the unique identifier for an event in the Agen-

da, imported from the latter. Using a specific interface, the people in charge of describing videos can pick from a list to chose the proper event the video is related to, in order to make sure that the link between the media and the event will be accurate. This kind of improvement requires changes in the source databases and in the professionals' practice. Even if it is only on the margin of their activity, it is essential in order to ensure that the user experience will be consistent.

Finally, many of the links are still created manually by the Multimedia team who is in charge of curating the data for the website. Thanks to the RDF model, it is very easy to add links between resources. We use an editing interface called »RDF Editor« to create those links, which are basically triples binding existing URIs in our datastore. The RDF Editor then behaves like a new source database which only stores links. Those links are restored daily when the rest of the source data is updated. This process only requires the URIs to be persistent across updates.

The user interface

The purpose of the creation of this data model and all the links between the databases is to provide our users with a new experience: being able to browse the semantics of the data. The initial purpose of the project was to make it possible for users to retrieve our content, in particular art works, by using words« from the natural language. A query such as »horse« would then retrieve not only those works of art that have the

risk of ambiguity

RDF Editor

unique identifier

Following the user's flow in the Digital Pompidou **71**

word »horse« in the title, but every representation of a horse thanks to iconographical indexing. This feature is offered on our website by the search engine SolR.

The creation of links also provides a very different way to browse the data. The interface has been designed to allow the presentation of many links on a single page. This required the use of design tricks such as the clickable tabs that unfold vertically to display more and more content. This presentation makes it possible to display all the related links to the resource, hence providing different points of view on the data.

This ability to browse the graph according to one's own centre of interest is what we call »the flow of meaning«: users extract their own meaning from the circulation in the graph of data; they build their own circuit adapting it to their interest and the time they want to spend on the website. Whereas in most websites the circulation is mainly hierarchical, from the most general to the most specific, in the Digital Pompidou the navigation takes the form of an hypertextual graph where all resources are displayed at the same level. Our website is also different from a traditional database in the sense that usually you have to express a detailed query in order to reach a resource; if the query does not get you to what you are looking for, you would try to reformulate it. Database records are often dead-ends, with no other choice than creating a new query to find other resources. The Digital Pompidou, on the other hand, always offers links to other resources and allows broadening the search to things that were not looked for in the first place.

Browsing through the data graph thus allows for the user to discover the content using his own focus of interest as a starting point. For instance, a major entry point for a user is the calendar of ongoing or upcoming events. The home page of the website provides a shortcut to current major events, including exhibitions. A visitor who came onto the website during the *Salvador Dalí* exhibition (nov. 2012 through march 2013) would have been invited to discover first a trailer of the exhibition, via the home page. In addition to the trailer, he would find other audiovisual material, such as comments of Dalí's major paintings by the curators. Browsing down the page, he would discover other events related to the exhibition, such as conferences or guided tours for users with specific needs, but also older events from the archives, such as the 1979 exhibition about the same artist. Other links available from this page include the works from our museum which are shown in the exhibition, the artist's page, the catalogue of the exhibition they can buy from the online shop or read at the library, and related learning resources.

Another main focus of interest for users lies in the major works and artists held in our collection. The search engine box available on every page provides easy access to that kind of material, but it is also our purpose that users can navigate directly to these kind of pages from a web search engine such as Google, Yahoo! or Bing. Today, about one half to one third of our monthly visits occur accordingly. In that case, the links available from the page are a way to ensure that the user will stay on the website and discover other resources, rather than bounce back to their search engine. Also, this is a way to enable serendipity and make sure that not only major and well-known artists are visited on the website.

Here is another example of the circuit: a user who remembers having visited the museum a few years ago with his children. He remembers having seen a big sculpture of a red rhinoceros but he does not remember the name of the artist. Searching for »rhinoceros« in the search engine and then filtering on »sculp-

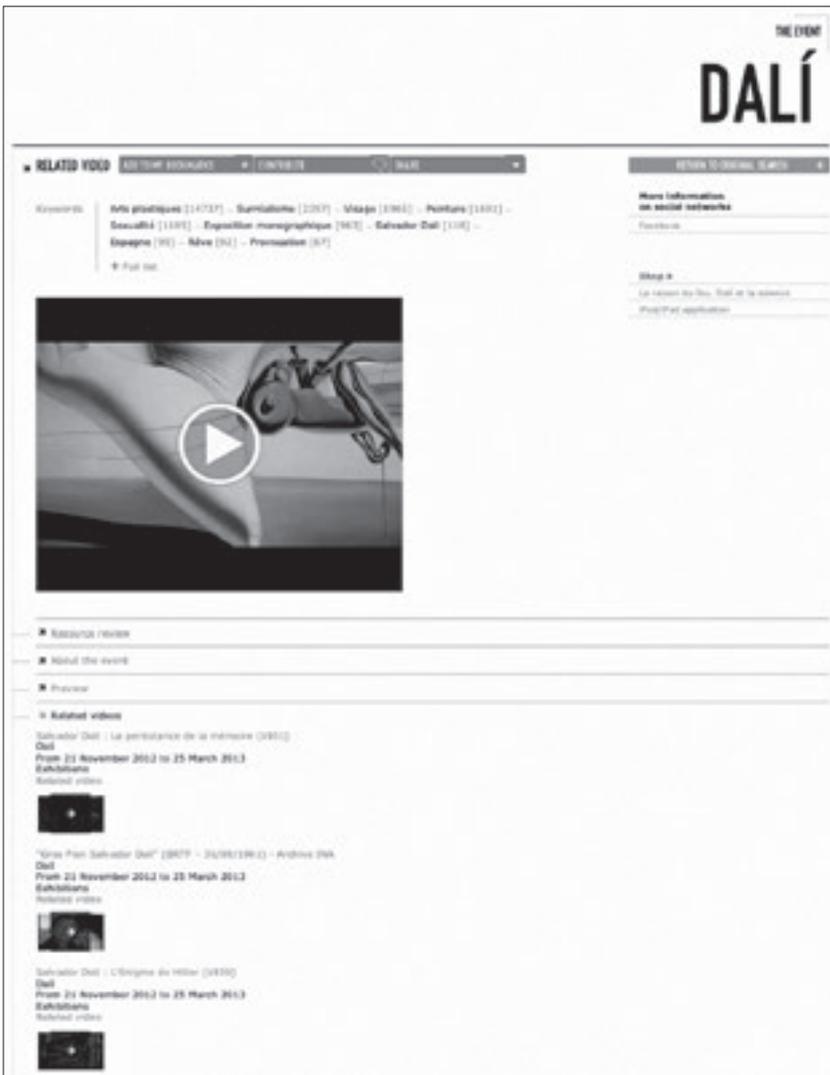**clickable tabs unfold vertically**

Fig. 2: Discovering audiovisual material about the Dalí exhibition

ture«, he will discover the Work page of the Rhinoceros by Xavier Veilhan. There again, audiovisual resources are available, including a video of the artist explaining why he created this work. The user can then navigate to the artist's page, Xavier Veilhan, and discover photos of him in his workshop and digital reproductions of his other works in our Collection. One of these works was a collaboration with Daniel Buren, created for the *Airs de Paris* exhibition in 2007 when the Centre Pompidou was celebrating its 30th anniversary. Our user can rediscover this past exhibition through the interviews of the artists which were filmed at the time. Bouncing from there to Marcel Duchamp's work *Air de Paris* which inspired the title of the exhibition, he can find learning resources of interest related to this famous artist and so on.

These very rich and diverse resources are also targeted to a public of academics or students. Let us imagine a student who is working on the concept of color in the history of arts during the 20th century. He will very easily find a conference on this topic by Michel Pastoureau, a French expert on this subject, which has been recorded on video in its entirety. And two clicks from there are videos and learning resources created for the *Colour* exhibition in the Centre Pompidou mobile in 2011.

These few examples illustrate our wish to elaborate an innovative approach to digital content by the way of hypertextual navigation, favoring serendipity and unpredicted discoveries. Before the website was officially launched, we conducted a user study to evaluate this new way of discovering content. We found out that our users did perceive that it was a completely new way of exploring data. They sometimes felt lost in the richness of the content, or had the impression that their browsing was circular; they looked for the site map and requested tools in order to help them visualize a location in this information space. While expert users (academics, students) said they first had to spend a lot of time on the site in order to understand how it works, users who were just browsing the site out of curiosity liked the fact that they would get lost and discover unexpected resources. However, they often complained that they had found interesting resources but were not able to reproduce the path that had led them there, hence to retrieve the resource. So it appears that we actually did succeed in creating a user interface that is completely original and specific to the fact that the underlying structure of the website is based on Linked Data. However, we need to develop new tools in order to help our users grasp the advantages of hyperlinked data and non hierarchical models. This is what we intend to develop in a next step.

Perspectives for future development

We are currently working on a new version of the website that will bring some improvement to help our users with these aspects. For example, the personal account will provide a »history« function and will record every resource that the users have displayed so that it will be easier for them to retrieve what they have already seen. Users will be able to easily transform this history of their circuit in the website into a bookmark folder, and they will have the possibility to share this folder using social networking tools such as Facebook and Twitter, or via email. Thus we hope that people will help others to discover interesting resources on the website.

Our public department has been leading experiments with the creation of recommended virtual circuits for teachers, using the social mind mapping tool Pearltrees. These circuits are targeted to teachers according to the level of their students and the content of official pedagogic programs provided by the government. Relying on these circuits, teachers have direct access to resources of interest to them within the vast amount of content available on the website. This approach has proven its added value to this specific public when introduced to them and we intend to include this kind of recommendation tool inside the personal account.

It is interesting to think that the tools available to professionals from the Centre Pompidou to create these circuits will be similar to the tools available to the general public to share their bookmark folders. Our approach to collaborative work does not create a barrier between the public and the professionals, but encompasses them all into one single discussion space where they can share their knowledge and experience. Future evolutions of the platform also include an even greater involvement of users in the construction of the meaning or semantics of the content, as we intend to offer collaborative tools for resources indexing and linking. This new feature will allow users to add keywords or tags in a wiki-like interface, and thus create new paths to help find resources.

In order to make these contributions as relevant as possible, our tagging system now relies on a thesaurus that was created by aggregating tags from our different databases. We had to curate them into a unified list and manage them using SKOS as a data model. Thanks to the use of SKOS, our thesaurus supports multiple forms of a same keyword that may exist in the different source databases. It will also be able to support multilingualism in the perspective of collaborative tagging by users worldwide.

Integrating the user's contributions into our data model, much alike the integration of several databases, is made easier by the fact that we are relying on a Linked Data model. Any addition to a resource can be managed as an RDF triple, a simple annotation to the content created by the Museum. Provenance information will need to be addressed in order to be able to keep the user generated content separate from the content that is validated by the institution.

Another interesting aspect of having an RDF core for our data is the fact that our current interface is only one of infinite possibilities of presentation for the many links that we have created from our source data. Today, the Digital Pompidou provides the official interface displaying this data, but it is only one possible interpretation among many. We can predict that we will work on a new design within the next two or three years, in order to improve the user experience, by taking into account the feedback we have had and by adapting to the new material that we are currently digitizing. However, it would also be interesting to see

what other actors could build by interpreting our data and in particular the added value that was created by the aggregation of databases that were originally distinct.

Data visualization has been explored for many years now, as an alternate way to provide access to large collections of data, but without succeeding to overcome traditional interfaces such as textual search engines or mosaics made of small images. Now with the development of open data, big data and data journalism, a new interest emerges regarding these techniques, not so much as a querying tool that you would put into the users' hands but as a storytelling tool that can bring up new perspectives for your data. For instance, we could build a representation out of the Digital Pompidou's data presenting the links between artists based on the exhibitions that have shown their works.

Experiments have been conducted in this regard by IRI (Information technology research institute), a partner of the Centre Pompidou on research in IT and digital developments. IRI has created HAD-Lab[2], a portal dedicated to learning resources in history of art for teachers. HAD-Lab experiments several interfaces for structured data, including a visualization tool that shows relationships created between different learning resources by tagging them with DBpedia URIs (see fig. 2).

The important part of this idea is the storytelling: data visualization is only interesting if there is a story to illustrate or if it allows new stories to be discovered. The task of unveiling these stories can not be delegated to the user himself, and information professionals such as librarians do not have enough experience in this area. Therefore it is very important that other players (data journalists, data visualization experts or even artists) have access to the raw data in order to be able to build their own representations, invent their own stories based on the material that we can provide.

In the summer of 2012, several experiments of data visualization were presented during the exhibition *Multiversités créatives* in the Centre Pompidou [Centre Pompidou, 2012]. The aim was to demonstrate the added value of data visualisation when it comes to understanding complex and moving structures such as the Web. In the future, the Digital Pompidou should naturally become a source for this kind of experiments, thus providing a new perspective on the works and the artists presented at the museum. In this perspective, the Digital Pompidou can be envisioned as an open door to a new interpretation of art and humanities. This tool will be even more powerful when the Pompidou data will be linked to external data such as Wiki-
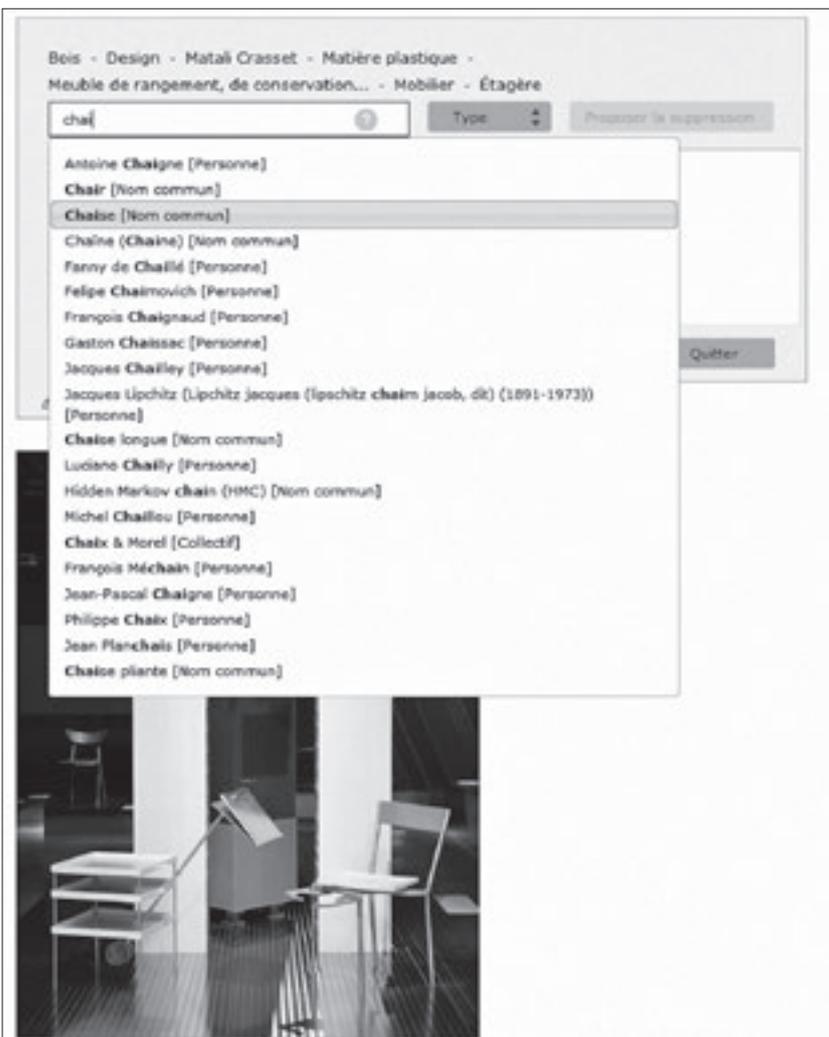
Fig. 3: Preview of the collaborative tagging interface with recommendations from the thesaurus
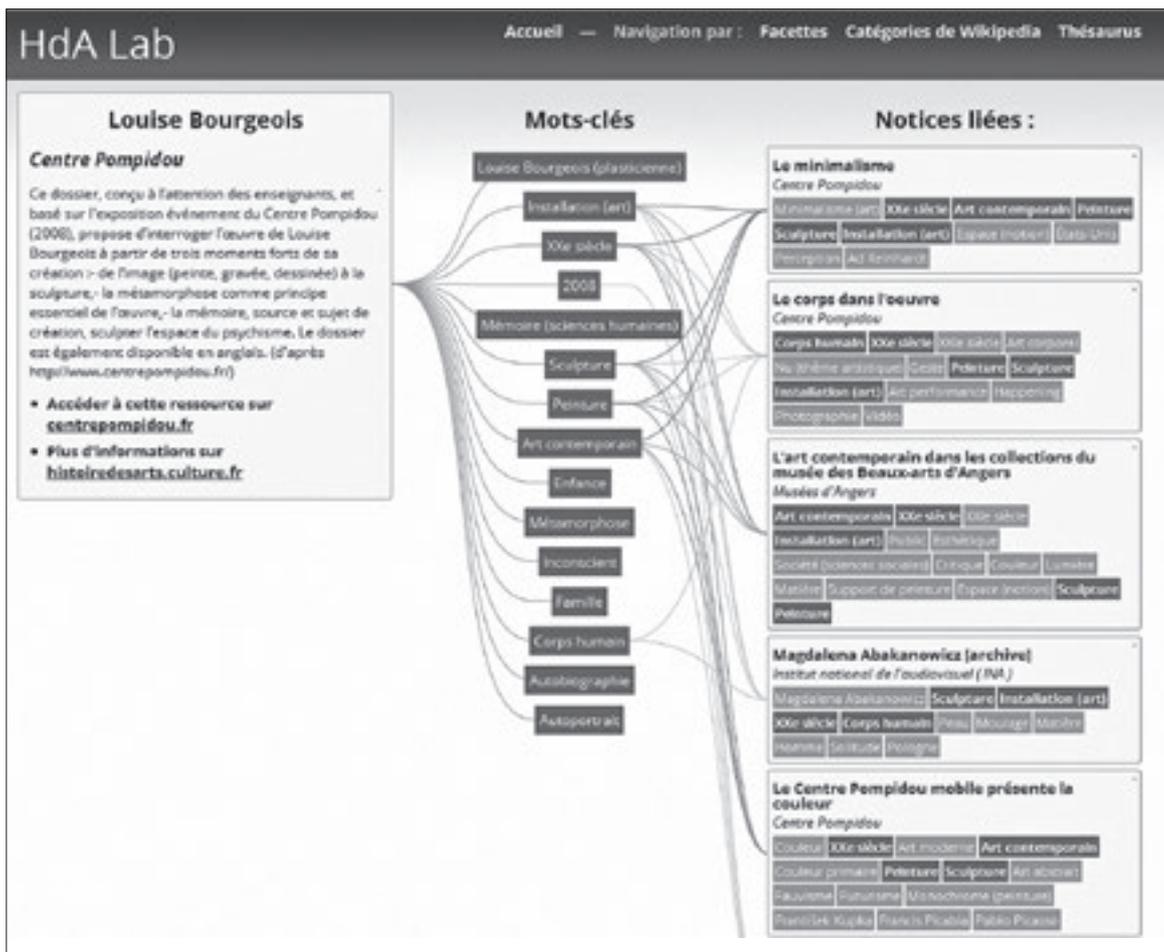
Fig. 4: HDA-Lab visualization interface

pedia, Freebase, Viaf or data.bnf.fr [Wenz, 2010]: This is definitely a motivation to open the data and make it available for others to create unexpected new interfaces with it.

References

Bermès, Emmanuelle: »Linked data and why we, librarians, should care.« in *Emerging trends in technology: libraries between Web 2.0, semantic web and search technology.* IFLA Satellite meeting, Florence, 2009.
Bermès, Emmanuelle: »Convergence and interoperability : a Linked Data perspective« in IFLA WLIC n°77, Puerto Rico, 2011. http://conference.ifla.org/past/ifla77/149-bermes-en.pdf
Centre Pompidou, »Multiversités créatives : Entretien avec Antonin Rohmer et Guilhem Fouetillou« in exposition *Multiversités créatives*, Paris, 2012. www.centrepompidou.fr/cpv/ressource.action?param.id=FR_R-fcfa20aad7968c0c76cecc245537a6&param.idSource=FR_E-fbe91867c63213578548d4c568cb35a
Library Linked Data incubator group, *Final report.* W3C, 2011. www.w3.org/2005/Incubator/lld/XGR-lld-20111025/

Koster, Lukas: »Missing links: the challenge of generating linked data from legacy databases.« Common Place, March 28th 2011. http://commonplace.net/2011/03/missing-links/
Linked Data for Libraries, Museums, and Archives : Survey and Workshop Report. October 2011. Report of the Stanford Linked Data Workshop. www.clir.org/pubs/abstract/reports/pub152
Wenz, Romain: »data.bnf.fr: describing library resources through an information hub.« Semantic Web in Bibliotheken 2010, Cologne, October 2010.
Wood, David: Linking enterprise data, Springer, 2010.

1 www.centrepompidou.fr
2 http://hdalab.iri-research.org/hdalab/

Die Verfasserin

Emmanuelle Bermès, Chef du service Multimédia, Centre Pompidou, Place Georges-Pompidou, F-75004 Paris,
E-Mail: Emmanuelle.BERMES@centrepompidou.fr

data will be linked to Wikipedia, Freebase, Viaf or data.bnf.fr