15 MULTIMEDIA TECHNOLOGY AT THE ORSAY MUSEUM

Institutional Experience and Future Prospects

Françoise Le Coz and Fabrice Lemessier
Musée d'Orsay
France

In line with a tradition dating back two hundred years, the role of The Orsay Museum, like all French museums, is not only to conserve and study the national heritage, but also to act as a centre of education and culture. Though the Orsay Museum may be defined as a "museum of fine arts", its design and broad range of artistic disciplines have widened the scope of the model inherited from the last century.

Its aim is to cover a very limited period - the decades from 1848 to 1914 - by presenting creations not only in the plastic arts, but also in other artistic disciplines, such as cinema, literature, music, etc., within their historical context. Through a wide variety of events taking account of the diversity of the visiting public - conferences, debates, classes, lectures, concerts, exhibitions, festivals, etc. - the museum staff seeks not only to present works of art and provide information, but also to stimulate a wealth of points of view and hence interpretations of the period in question.

From the outset, new technologies were seen as an important tool for the achievement of these ambitions, able to complement more traditional communication methods and thus help the museum to fulfil its cultural role.

Presentation of interactive applications at The Orsay Museum

Two applications were created for the opening of the museum.

The first is the gallery of dates, which presents the historical context of the period. By selecting a year and then an event, the viewer is able to follow a biography or a presentation of a general theme. Each information unit is handled in the form of a brief scenario of still images accompanied by a sound commentary on videodisk. These scenarios are available on seven consultation stations equipped with touch screens.

The second, called IDM'O (images and documents of the Orsay Museum) is a regularly enriched documentary and digital image database. It provides a catalogue of the museum's collections along with a selection of works necessary for the illustration of texts proposed to visitors on subjects such as photography, van Gogh and Degas. This vast reserve of information is destined for art historians and museum visitors. The base is consulted via an alphanumeric keyboard and two passive terminals, one for the text and

the other, a high-definition 16 bit colour monitor, for the digital images. They are connected to an Ethernet-fiber optic dual local network and a Digital computer (Vax). IDM'O, running on Basis software, now contains 27,000 records presenting works of art and 8,000 associated images stored on digital optical disks. Both applications were designed to provide information to adults. In both cases, the information was complementary to that available from other sources inside the museum and in both cases, the aim was to encourage visitors, once they had discovered the terminals, to initiate a personal learning process according to their particular centres of interest. It should be pointed out that in 1986, the use of new technologies in fine arts museums was a rare phenomenon and that the design teams worked largely on the basis of hypotheses. Their projects were sometimes hampered by the very newness of digital imaging technologies.

Before presenting the experience acquired over the last seven years with these interactive applications, it should be noted that they were positioned at specific locations, somewhat away from the main path of museum visitors. The gallery of dates was placed in a former machine room of the railway station, behind the large clock overlooking the main hall. The visitors remain standing to consult the screens. Printed panels summarise chronological information and indicate how the years are distributed on each of the viewing stations.

IDM'O is accessible to specialised visitors to the documentation service and to all visitors in the so-called "consultation" room above the Café des Hauteurs and close to the impressionist collections. The room also includes a video and sound library and reading booths containing the museum's main publications. The visitor can consult IDM'O sitting down, in three ways :

- in document retrieval mode, with "search by author and title"
- in reading mode with "photographers and photography", "Van Gogh", "Degas"
- in game mode, with a game of hangman
- The historian can consult IBM's in only one way: direct use of the documentary command language.

Experience acquired over the last seven years

A number of conclusions can be drawn after seven years' experience. We will mention the major points in the variety of fields concerned, paying particular attention to the questions raised by the use of these systems by visitors. First of all, we will examine the question of professional research, and its counterpoint, namely the enrichment of a documentary base such as IDM'O.

Impact on the professional public

IDM'O has already proved its usefulness as a research aid, serving essentially as a time saver. The wide variety of research criteria also opens up new prospects for the researcher since the task of assembling the necessary basic material has been greatly simplified.

However, one obstacle remains, namely the cruel absence of a man-machine interface to facilitate the expression of requests. A specialist starting out on research work will need to consult a variety of documentary systems inside or outside the museum in order to locate archives, establish a bibliography, draw up lists and gather information on works or artists. However, all these systems differ greatly in terms of objectives, structure and vocabulary. Moreover, they have no user-friendly interface and use different command languages.

These factors multiply access difficulties. The existence of a user's manual is not sufficient, even if it is accompanied by a training course, since the effects of the course diminish with time. Researchers would therefore like to have a human advisor to draw up their requests and help them with their research strategies. While they are now familiar with the use of word processors, they must be provided with interfaces suited to their working practices, with increased access to remote data and image base servers and with the possibility of establishing working files to handle their selected data.

Enriching IDM'O

The success of retrieval and the consistency of results depend upon cataloguing rules and on the general consistency of analysis. Though IDM'O is modelled on two databases of the Direction des musées de France, the organisation of documentary analysis has been adapted to the museum's specific collections. This analytical work is being performed by an outside company in collaboration, with the museum's curators and archivists, under the supervision of the cultural service. For the enrichment of such a base, the main difficulty encountered is that of finding a balance between the desire to be precise - around sixty compound fields can be used to describe a work and its history - and the need for rapid handling of the complete collections of the Orsay Museum, which total around 35,000 works.

Impact on visitors

Though the profiles and working practices of the professional public were known when IDM'O was launched, this was not the case for the museum visitors. Periods of observation, interviews and surveys in the form of questionnaires made it possible to establish some general patterns. Several points appear to require particular thought : the type of information provided according to the user, the quality of the viewing interface and the link between the subjects proposed and the museum visit.

These points are based on an observation : though the gallery of dates was designed for the general public, IDM'O was aimed essentially at cultivated adults. In fact, these applications are used mainly by young people (in 1990, 45% of IDM'O users were under 25 years old). Their level of knowledge, at whatever age, is quite varied, though most express great interest in these systems, teachers especially.

This disparity between the predicted target public and the real public raises the problem of the type of information. The information provided by the database and the first application on photography are meaningful to the user if, and only if, he or she already possesses basic knowledge in the subject. For example, the presentation of the information "exhibited at the Salon des Refusés" or "second class medal at the 1863 Salon" are quite empty of significance for most users. In the van Gogh and Degas applications, created after the museum was opened, we had already tried to remedy this problem by simplifying the style of the text (no complicated expressions or esoteric language) and by avoiding the use of references. The texts are longer and accessible via multiple menus and sub-menus. Surveys have indicated that half the readers prefer to look at brief summaries before choosing whether to read more in-depth presentations.

This situation poses a double problem, that of the quality of the interface, which must enable the user to grasp rapidly the possibilities offered by the system, and that of the structuring and formal presentation of information. The "guide" function to help the visitor during consultation appears to be essential, at the beginning especially, since the user must become familiar with the system almost immediately. It must help the user to make his choices. In our view, the use of long lists or menu sequences should be avoided, since at the end of his visit, the visitor remembers only a limited number of names of

artists or works, retaining essentially a series of impressions and visual memories. Beyond the possible association of images, text and even sound to present the scope of the application and the initial choices, it is the very principle of the organisation of knowledge, and thereby the information to be transmitted, that is in question.

A variety of levels and forms of presentation could simplify the learning process while respecting the tastes and habits of the user. The contents of an interactive application must be organised so as to enable the user to work from what he already knows towards new discoveries, giving him the opportunity to build up a rich and pertinent network of relationships. This network incorporates information from other sources such as audiovisual displays, information sheets in the rooms, publications, etc... and above all the works on display in the museum, and must establish clear links between the various elements. Throughout the visit, the visitor should be reminded to use these systems to extend his knowledge and deepen his understanding of what he sees. By proposing a choice of consistent and immediately meaningful entries, by enabling the user to "jump" from one topic to another as he chooses, by enabling him to construct his visit or keep a memory of it in the form of screen copies, the Micro Gallery of the National Gallery in London has found an answer to these questions.

The use of multimedia technologies in the public area of the museum - to quote Roland Schaer - Manager of the Orsay Museum's cultural service - must make it possible " to combine cognitive intellectual aspects and visual aspects, in other words, to work at the frontier between seeing and knowing."

In addition to this experience in the use of interactive multimedia applications in the museum, lessons have been learnt concerning the more general use of computer technology in an institution whose main vocation is elsewhere. The critical remarks that we present do not imply that overall results are negative. With an annual total of around 39,000 users (counted from the sixth minute of use) in the consultation room, some of whom come regularly, the impact of IDM'O is partially positive. These users express their satisfaction, even though IDM'O does not correspond fully to their needs and wishes. It was essentially this user reaction which convinced the museum to continue providing the service, though the fact that the application was a prototype, with numerous specific developments, weighed heavily on the organisation of operation and maintenance and on the possibilities for future evolution. These burdens were even greater to bear, given that the museum itself has no personnel with the appropriate technical competence and was not authorised to take on any additional staff. As a general rule, the lack of internal human resources has made the running of IDM'O a much greater administrative headache and hence much more costly.

Multimedia technologies at Orsay Museum: future prospects

When, in 1991, the museum direction decided to establish a new development plan defining the evolution of the museum's interactive systems over the next five years, the following questions were constantly in the minds of the team responsible for its implementation: Why use interactive multimedia? Who is it for? With what goals in mind? What technologies should be used? What skills should be deployed? At what cost? Moreover, there was a strategic dimension underlying all these choices, since all investments in this field must also fit in with the long-term strategies of the institution. It is no longer sufficient to handle the applications on a case by case basis, instead it is essential to identify areas of overlap or interdependence, to have a constant overall vision and hence to create a synergy between the various projects in order to ensure consistency of purpose.

The status of the Orsay Museum gives it a certain independence. Nevertheless, as an external service of the Direction des Musées de France, it must justify its choices and be accountable for them. Representatives of numerous external administrative services are invited to sit on a steering committee to take part in discussions and decisions relating to the information technology museum. This outside contribution is further extended by the involvement of independent personalities such as Jacques Thuillier, professor at the Collége de France, and consultants.

The development plan: methodology and results

The development plan for the interactive systems of Orsay Museum was based on an existing method, "Racines", developed for the French administration. Each of the development phases of this plan involved discussions and choices by the steering committee. This study obliged us to assess the value of certain multimedia technologies, to analyse the state of the market and the strategies of its players before making decisions based on the museum's particular constraints: compliance with international standards wherever possible, use of the market products and standards in order to limit specific developments and guarantee future upgrading, guarantee data "portability".

We will present briefly the projects concerning the gallery of dates before analysing those of IDM'O.

The gallery of dates

The gallery of dates application is to remain identical, the only changes concern its transfer onto new hardware and its removal to a different area of the museum. Indeed, it was considered important to associate it more closely with the visitors' path through the museum by presenting it in the area called "a historical view" at the beginning of the visit. This area comprises an audiovisual room showing documentary films on the history of the period and showcases displaying a number of historical accounts. This new area, located between the "young people's plateau" for school groups and the exhibition halls of the permanent collections, is easier to find and more suited for use in association with the themes of museum visits. The moving of the gallery of dates has already started.

Developments in IDM'O

For IDM'O, the main questions raised were the following :

- Is it possible to adapt such a specific application to work with general standards?
- Should we continue to handle information destined for professionals and for visitor applications in a single database?
- What multimedia options are available for visitor applications?
- How can running and maintenance costs be kept to a minimum ?

Following an analysis of these questions and of the needs identified, the steering committee drew up two development projects : the "researcher" project concerning the professional public and a multimedia workshop for museum visitors.

The "researcher" project :

The documentary system must evolve towards a client-server type architecture with centralised data and distributed data processing. The relational version of the Basis documentary software package has the necessary qualities to handle the needs expressed. Windows-based graphical interfaces will be created to simplify data retrieval and input. A part of the "researcher" project corresponded to the objectives of the RAMA (Remote

Access to Museum Archives) Project, a European project of the Race program, which was launched in January 1992. The project's aim is to develop remote consultation of museum databases and fixed or animated image bases by means of common telecommunications protocols and similar interfaces. It was therefore decided to take up the offer to participate in the project in order to ensure compatibility with other museums and, in the long-run, to develop on-line consultation of IDM'O via a remote retrieval service. Lastly, just when the museum was being asked to find new sources of funding, the European Community agreement to bear 50% of the costs of RAMA made it possible to reduce the Ministry of Culture's share of investment.

Multimedia workshop:

As regards future applications for visitors, it was deemed preferable to create a multimedia workshop for a duration of around three years with a view to conducting experiments to assess feasibility and costs. Three main angles were defined :

- The first angle concerns technologies : what architectures, hardware, software and standards are most suited to the needs and constraints of the museum ? In particular, it will be necessary to prove the feasibility of data centralisation, be it specialised data or information destined for visitors, and to establish the possibilities for transfer to editorial supports such as compact disk (CD-I or CD-ROM)
- The second angle of research aims to seek out the existence of an authoring system suitable for use by non-specialists for the development of preliminary models or even prototypes of future educational applications, the museum's ultimate objective being to acquire a certain independence in this area
- Lastly, the third angle concerns the development of new multimedia applications and their evaluation by the public to ensure that their cultural and educational objectives are attained.

These three main fields of research have been applied to the design of prototypes of two applications, a teachware called "learning to see" and an encyclopaedia on artistic creation between 1848 and 1914. They will ultimately replace the applications in the consultation room. Through the grouping together of the skills necessary for design of multimedia applications, this workshop aims to promote knowledge transfer. A policy of partnership with private companies and other institutions has been implemented, at the same time enabling the workshop to obtain external funding.

Conclusion

Despite a number of singularities, the experience of the Orsay Museum is similar to that of many other museums and cultural establishments:

- resistance to the introduction of computer technology on the part of information holders
- difficulties in team organisation
- shortage of in-house personnel, and hence a lack of certain specialised skills within the museum
- problems of management, administration and maintenance of a specific system
- difficulties for internal users in becoming familiar with the system

These difficulties have been overcome in part, or are in the process of being resolved thanks to the implementation of the development plan. One will remain however - the shortage of human resources. This shortage will be less severely felt if the quality plan proves a success.

The museum projects in the field of interactive multimedia applications are the result of a conscious cultural policy within the museum, concreted by the choice of internal budget allocations. The museum direction is perfectly aware of the effects of their decisions. Confronted with the ever growing and evolving range of technological possibilities, the so-called fine arts museums often find it difficult to make technical choices and to define their role within the multimedia production chain that is now developing. One of the objectives of the Orsay Museum is to define its editorial policy for interactive multimedia works. But today, though the notion of multimedia has so often been associated with the cultural sphere in the mouths of designers or promoters of technology, we should not underestimate the immense intellectual and financial investment necessary for the development of multimedia products worthy of their name. Only by dint of these efforts will it be possible to develop a market comparable to that of paper publications, in other words accessible to all, both individuals and institutions, and thereby to enable producers in the public or private sector, in accordance with their ethics, to obtain a return on their investment, be it material or intellectual. We must also succeed in reconciling the long time needed by conceptual design with the need for rapid decisions imposed by the continuous technological progress.