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Digitisation and Preservation in the French National Library

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In the French national library, digitised documents offer more than an opportunity for experiments: they are now part of everyday treatments and play an increasing role in library management. The electronic library is under construction.

The digitised documents come from two main sources: one is a special collection created within the new library, the other is legal deposit. Another possibility for the future will be a digitisation service available to the reader on demand. Each of these new options raises specific problems of access, conservation, and organisation. I would like to deal here with the more prominent aspects of the matter, while emphasizing the interfaces with preservation. Generally speaking, as we shall see, the Bibliothèque nationale de France currently considers digitisation more as a means of giving access to a great wealth of documents not readily accessible until now, rather than as a preservation technique in its own right. Nevertheless, preservation problems must obviously be dealt with right from the start.

1. The electronic library

Giving access to digital collections is a major component of the Bibliothèque nationale de France project. The aim is to digitise 100 000 books, 300 000 pictures and 1 000 hours of listening, and make all these data available by the end of 1997. The basic idea is to develop reference collections which can be remotely accessed.

With the exception of the digitising operations which are subcontracted to private companies, the whole process is taken charge of by various categories of library staff : selection of documents, cataloguing and description in a database by librarians, taking photographs in the library workshops. Quality control of photographs and digitised documents are the responsibility of a special team which belongs to the data processing unit.

In the case of printed material (books and periodicals) about 44 % of the titles were published during the nineteenth century or earlier, most of them in European languages, mainly in French. The digitised collection, in particular ancient and rare documents, comes mostly from the National library, either from originals (40 %) or from microfilms. Text rather than bit-map format was chosen for digitising on account of the higher efficiency and lower cost. In the aggregate a page in bit-map format costs four times as much as it does in text format.

The same scientific criteria rule the acquisition of pictorial documents. Photographic proofs which are the main source for digitising come mainly from the library but also from museums or agencies.

2. On demand digitisation

In the autumn of 1997, when the research library in Tolbiac is due to open, we plan to offer on demand digitisation also. Though

the technique differs, the organisation of work is very similar to that of microphotography. The digitising workshop includes a camera, a model holder and a floodlighting system. Technicians can copy either from books, periodicals or microfilms. One workshop produces about 2200 original documents (250 pages each) a year. It also copies files retrieved from the already digitised collections.

3. Legal deposit

Since June 1992 software and databases published in France are given to the national library through legal deposit. Beyond these theoretical categories we receive a great variety of digitised products. There are no technological rules or limitations, which means that librarians are faced with many practical questions:

- is the operating system available in the library ?
- is the product in good condition and comprehensive ?
- are we able to maintain this database management system and for how long ?
- are we able to maintain the digitised data ? For instance some of them are stored on a magnetic media and we have no guarantee concerning their service life.

The most urgent problem is not long-term conservation but making sure that readers will be able to access the documents in the coming years. Considering the great disparity of all these digital data and software the decision was taken to transfer them to optical disks (CD WORM). The use of our information system also implies that we create special links and indexes to access these documents sometimes through emulations. In other words original documents are not the medium we use to give access to data. They will always be transferred to other media, sometimes converted. The first priority is given to content and access.

4. Access to the electronic library

The creation of an electronic library aims at achieving several major objectives:

1) To prevent the wear of collections brought about by the increase in readership;
2) To make a wider array of documents more easily accessible to the greatest possible number of readers;
3) To offer readers a very high level of service;
4) To give access, through remote retrieval, to the documents themselves, and no longer merely to references by way of a catalogue.

In summary, what digitisation offers here is a way of accessing proxy documents. It is thus also a means of preserving our common heritage.

The electronic library will be stored on optical disks (CD WORM) and retrieved on PC terminals using the ATM techniques. The same machine will allow readers to access the on line catalogue, to identify references and then to consult digitised texts or pictures. Texts will be available in graphic format in the TIFF standard. Pictures will be stored in the JPEG standard. The electronic library will be hosted on a dedicated server and integrated in our new information system.

In order that readers may simultaneously access digitised books and digitised pictures and use word-processing software we will need a powerful server. According to our estimates, the electronic library requires at least 100 gigabytes to accommodate 100 readers at the same time.

For technical reasons, video and sound are digitised without data compression, and stocked on a separate server. Document retrieval will be accomplished by means of dedicated terminals which readers will be able to use in the audio-visual department.

5. Use of digitising for preservation ?

Digitised documents in the Bibliothèque nationale de France are surrogates of originals. Compared to microfilm, digitisation offers new possibilities like fast retrieval. For sound, digitisation is the only way to prevent premature wear.

As far as long-term preservation is concerned, we continue to recommend 35 mm microfilms. In fact optical memories do not yet offer sufficient guarantees.

There are indeed a lot of contraindications:

- lack of permanent standards;
- indefinite number of storage media;
- indefinite number of writing and reading techniques;
- lack of reliable permanence of the media: in the best possible conditions some optical disks could be preserved for 25 to 50 years, while microfilm can last a hundred years.

Moreover the differences in cost plead in favour of reprography: microfilm is cheaper than digitisation.

6. Preserving digitised data

Even if we continue to use microfilm for the preservation of printed material, we will in any event have to deal with preserving digitised documents.

A lot of methodological work was accomplished by the task force on the archiving of digital information commissioned by the Commission on Preservation and Access (CPA) and the Research Libraries Group (RLG). But although we know that optical memories like CD ROM and CD WORM are probably part of the solution, no practical recommendation can be made at the moment.

We may summarise the situation as follows:

1) We are very much dependent on the fluctuating market of technologies not only for the choice of storage media but also for that of data compression methods or database standards. The expanding market of digital video has brought about enormous pressure to increase considerably the capacity of optical memories. So it is that the libraries may store more and more information against smaller and smaller investment. Higher quality and longer service are not however the primary objectives of manufacturers. As in other industries the idea is not to reach for the best quality but to ensure an adequate level of performance. Such a standard may be insufficient for long-time preservation.

2) The consequences of this situation are that we must prepare to transfer the digitised data, to move from one information system to another and if possible choose non-proprietary equipment. The preservation of digitised data must be active and evolving.

This situation has many consequences for library management: increase in preservation costs, organisational change, new ways of sharing responsibilities, etc. Preserving digitised data and indexes can be compared with maintaining a database or an information system. It requires a close co-operation with the data processing department which will henceforth have a crucial role to play in ensuring preservation.

In conclusion, I suggest that we wait no longer for the right solution to our preservation problems. Digitised data cannot wait until tomorrow: they must be preserved now, without further ado. As far as the preservation of documents is concerned, the future is in some respects within the present !

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