The Multimedia Library as a General Perspective of the Library System

by LEV AMLINSKI

Globalisation of the information transmitting system in its complexity of scientific, educational, social and economic demands of society has lead to the formation of the international information market. Libraries have always held an important position in the entire information market and will continue to do so in the future. When talking about the development of libraries it is important to come to terms with the most important scientific-technological and economic realities of the present time:

- the constant appearance of new information carriers on the market;

- the fast development of hardware and software;

- the constant development of new communication technology;

- the increasing competition on the market of information performance;

- the increasing educational factors on the job market.

The present situation of the modern library system differs from all previous situations: the library technologies are undergoing active digitalization

Multimedia has developed as a reality, that at the same time has an effect on rational thinking and on emotional creation. This will eventually lead to a qualitatively new perception of events and appearances of our surroundings and will activate associative thinking amongst other things.

The new thing in principle of multimedia formation is that - instead of the former well-known technologies - now the numerical technology on a computer basis is used for the co-operation with different analogue media (cinema, TV, etc.). Thus we will gain a synthesis of information of all carriers and transmitters.

The new thing in the utilisation of multimedia is not only the possibility of receiving messages from different media but also the possibility of interchanging during correspondence in an optimal way for every adequate variable level. In this way the multimedia systems will develop into a multichanneled communication system.

The new thing in the co-operation between people and multimedia system is the fact that people know the possibility of choice of the needed fragments of every information media and after that can again synthesize, complete, change and add new elements and thus create their own multimedia interface fitting their own wishes and demands. In this way it is possible to develop individual educational, scientific, entertaining and other groups of information on the basis of an electronic book for example or any other apparatus.

Nowadays and in the near future, libraries will give consideration to multimedia.

Having dedicated my presentation to the topic of multimedia libraries I will now go on to explain this term from my point of view.

Although this term is now often found in specialist literature, nobody really can say how this library has to look in order for it to be considered a multimedia library. We can theorize a lot, and discuss the terminology, but in my opinion the most important questions are: What do these libraries do for the readers and how do they effect the job of a librarian? Concerning the co-operation between the librarians and the architects one has to realize what kind of instructions the librarian gives to the architect when planning a multimedia library. It is also important what kind of specification the inner architecture of the library building should have.

A multimedia library is one that has a multimedia stock, technical equipment and computer nets, that can be used by the reader. Moreover they provide the reader with the possibility of entering the net and a complex perception, both acoustically and visually, of the information space, the search for the required information in this space and working with this information.

One has to confirm that even the term multimedia differs from its common etymological origin, that is, multimedia is more than the sum of its parts. This is because multimedia also has the computer numerical display at its disposal which in principal provides new quality and - at the same time – provides for the librarian's demands, i.e. using the multimedia stock. The libraries possess different media in analogue display, these monomedia can be revised by the libraries and worked out as multimedia for the readers.

Here we have to point out that - by no means – will the libraries give up their traditional technologies, their traditional stock and the traditional condition of the readers and they don't part from their vast experience either.

One important claim for the libraries is their providing a psychological comfort to the reader getting deeply involved in multimedia and further they consider the specifics of behaviour and of the psychological situation occurring under the concrete condition of the readers using the library with all their different individual interests.

Now let's explain the main categories of the above definition.

MULTIMEDIA STOCK AND MULTIMEDIA CATALOGUE

The strongly increasing interest in multimedia in the fields of science, education, culture and entertainment is due to man's unlimited possibility of taking part in the formation, changing and utilisation of multimedia material - including elements of playing games. Just think about computer games having developed to a vast economic branch. As Beate Tröge says in her interesting article (B.I.T. 2 (1999) Nr. 4), during education a person remembers until the next day - only 30 % of the information that he has read, 20 % of the information he heard and 50 % of the information he heard and read at the same time. However - he or she remembers 90 % of the information which he has - at the same time - heard, read and revised by himself, changed and added own ideas to. Concerning the production of multimedia information and their application in high school learning - the author maintains - libraries should play the biggest part in this and should co-ordinate with information centres and computer centres.

What about the opinion of the libraries of this statement?

During an international conference about the media-competent library in the information society „Die medienkompetente Bibliothek in der Informationsgesellschaft" (6. - 10. Dez. 1998, Berlin), as a result of interesting and multiple discussions it turned out that a librarian always has to attend further training to be able to master the whole multimedia technology. Also he should learn how to be helpful to the reader researching the required information. Libraries themselves should develop into an „information store" and the whole tendency of the development of the librarian should run in the direction of an „information broker". All this is very interesting, but we shouldn't forget, that we only can get to know what exists and that it is absolutely impossible to get

to know what doesn't exist at all. In the most libraries there is hardly any multimedia technology up to now. This technology has to be developed. This technology cannot be lent - e. g. from the mass media - because the vast TV-broadcasters are interested in having the numbers of professionals limited. Contrary to this in a library this technology has to be used by thousands of people of different educational levels. The readers are interested in all fields of social knowledge. Thus we need a specific library multimedia technology.

The librarian can take part in this process as an expert, and also as a user, but not as a developer of this technology. If we try to change the librarian into a programmer, into an art director, into a sound engineer and last but not least into an expert of art , we never will reach this aim but we will lose him as a librarian. This is why - if the library wants to build up a real multimedia stock and wants to offer it to its readers – we should first of all develop a new technology. This technology should be professionally dealt with by several specialists.

It may be that some library directors will oppose this thesis by arguing that the development of experts is principally not possible, that it cannot be afforded because of the lack of financial means due to the current severe economic situation.

But if we want to have multimedia libraries, it is absolutely essential to build up such groups as groups of programmers and computer experts which were hired 20 -25 years ago.

Concerning the libraries, they are very successful, master the new work with the information carriers, with the computer net and the rhythm of a librarian's job getting faster and faster.

Everybody knows that every library starts with its stock. Exactly the same applies to the multimedia library. Multimedia materials that are used in the library can be split into three parts:

1. these are the products which come complete from different producers such as publishing houses, TV-studios, cinema-studios, multimedia centres etc.;

2. products that are produced in form of multimedia blocks according to individual orders or demands;

3. products that are produced by the readers themselves, either individually or in groups including teams communicating via the internet.

The first above-mentioned group has no individual address. Whereas both of the next groups always have an individual address and it is especially this individual address which causes the complicated character of the libraries' multimedia technologies.

Of course it is possible to undertake another classification of the stock but besides this we must have the necessary digitized catalogues along with the multimedia stock. That is, when talking about multimedia stock we will automatically come to the multimedia catalogue.

The multimedia catalogue should consists of four parts:

- hypertext catalogue;

- audio catalogue;

- catalogue of fine and plastic art;

- catalogue of video films.

The hypertext catalogue contains bibliographical data of books, journals and various other texts, also the written data of audio, video, fine and plastic arts and others. The hypertext catalogue disposes of a wide-channeled structure of bibliographic data with many crossovers. But we also have to consider that we cannot integrate a piece of music, an art work, a video film into a multimedia block if we only have the written data of these works. The music has to be heard, the art works and the videos have to be seen, which means that the multimedia catalogue should contain music, an art work or a film. All this has to be digitized.

These parts of multimedia catalogues can be linked with the hypertext by special options, but nevertheless they keep independent of them at the same time. The complete structuring of these additional catalogues like e.g. music catalogue has to be worked out according to its attributes (e.g. stilistic attributes like classical music, popular music, light music, pop, techno, jazz; geographical music like European music, Latin American music, African music etc.; instrumental attributes like piano, violin, orchestra and chorus). Of course it is possible to detail all characteristics even more precisely to make this classification more convenient for the user.

Improving the convenience of the user is one of the most important requirements of a multimedia catalogue - in my point of view. Concerning this we can state that the digitized multimedia catalogues of the library are not very convenient to users. Of course they offer different ways of approaching: via author, key-words, subjects etc., but besides this useful efficiency the user

cannot make any additional precision work nor assorting of the chosen documents within the vast list of found documents. The further development of electronic catalogues like the multimedia catalogue is important because during the last decade especially the catalogues were the quintessence of the complete computer technology in the libraries and still they are. Actually electronic catalogues are a shop-window for computer technology and they connect the reader with the interior technology of libraries. If we look at this from the angle of an eye of the user's convenience we should consider the multimedia catalogue as the highest level on the fields of electronic catalogues, because this catalogue can deeply intervene in the creative process whilst working on multimedia products.

Since four to five years active research on the fields of metadata are conducted. Metadata differ from the traditional catalogue data by the possibility of delivering the document with the support of the proper software, which shows the address of the document in the net.[1] Certainly this is not the only difference but this links the document with the electronic net, in which it is. Thinking of a future fusion of multimedia catalogue with metadata we can explicitly refer to Amanda Xu whose statement of opinion is, that electronic catalogues of libraries can function as a sluice to the electronic resources in Internet.[2] If libraries begin to use this sluice, they will gain a real possibility to improve their performance for the readers multifariously.

The multimedia catalogues can make the development of multimedia blocks easier and thus they push forward and support the development of combination theory within a creative process. At the same time multimedia catalogues are a real technological base for generating the multimedia products in libraries.

THE INFLUENCE OF MULTIMEDIA ON THE INTERIOR DESIGN OF LIBRARIES

There are disagreements between the prediction of scientific-technical development and the development in itself. That is because the predictions are based upon the existing scientific-technical level, upon the categories that are already known. But the development itself doesn't run linear, but irregularly as a result of new knowledge, principally new products etc. All this applies to its whole extent to the libraries. And looking from this point, what has been performed by the librarians and architects during the previous decades, we can state that especially the extreme uncertainty about the libraries' development had an effect on the libraries' inner decoration as the most important point.

That led to its concrete solution in projecting space of extreme flexibility. That has saved libraries from rapid becoming out of date and this will remain

an important solution in this sense for the future, too. But it is already clear now, that the high flexibility of the space is not enough.

What kind of flexibility can be helpful when at the same time the stock, the number of readers and the number of employees is increasing? In the years between 1960 and 1993 at the university library of Münster, the personnel has more than doubled, the stock almost tripled, the number of readers has increased seven times and the loan of books has increased nine times. But at the same time there are several libraries that don't change so extremely, that cannot even say how the numbers of readers, the stock, etc. alter.

The question is why there is a necessity for new principles of functional architecture when building libraries. To answer this question - in my view - we should point out, that all previous changes of functional architecture, including the fixed planning in three sections and their later flexibilisation, are connected with the printed paper as information carriers like books, journals, newspapers, catalogues, loan forms etc. At the time of the introduction of the fixed planning of three sections of libraries there was neither mechanization nor automatic control, at the beginning of the flexible planning of libraries there were no personal computers or digital information networks. Thus the transmitting of information was bound to the physical circulation of the information carrier. The choice of books and their handing over claimed the movement of the reader in the reading zone. The whole job of the library's staff was and still is practically connected with its movement between all library zones. That leads to our statement that the inner flexibilisation of every library zone was and still is the most effective solution to stop the becoming out of date becoming out of date process of libraries.

But at the same time we have to realize that the new realities in the information society, including new means of mechanization and automatic control, new means of transmitting, new information transmitters and -nets will bring up suitable principles for the library architecture. When Gerhard Liebers said twelve years ago, that the future development of libraries cannot be predicted, then now such a statement has become even more relevant with the increasing dynamic of the whole development of the information society. In this context one should do without the complex planning of the building and without short ways of transporting books and slips. A functional inner architecture of library buildings will be of utmost importance: the planning of large-scale spatially-independent zones of the library buildings which open an independent possibility of development suitable to the changing of their functions.

The planning of the large-scale spatially-independent zones of the library buildings as an architectural principle makes it possible to maintain good

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performance of libraries for all future variations of the libraries' position on the information market under the condition of rapid change of its socio-cultural functions in society. In the long run it will be up to the libraries to escape from the sword of Damocles of the choice of alternatives, of being forced to choose between the short-termed moral age of library buildings or the frozen financial budget for the prolonged maintenance of their existing building structure.

In general we presume that when it comes to planning, it is especially the librarians who support the ideas and solutions of functionality of inner decoration.

That leads to the question, whether library functions are considered only to be technological processes and operations that immediately focus on the condition of the readers, or whether a wide range of tasks belong to the functions of a library, including the supply of the correct psychological atmosphere for visiting a library and working inside, becoming aware of taking part in the reality of the building and appreciating the library as a temple of science. In between the wide range of opinions about the role of the university libraries, for example, within the complete structure of the educational and learning process as within the scientific work at universities there are diametrally contradicting views. One position has the opinion that libraries have to be more integrated in the university campus and so will become a kind of centre for meetings, communication and discussion. The other position maintains that – first of all – a library should support the meeting with the book, should support systematically working with the aim of gaining knowledge and that it is not a club for any meetings equipped with the proper interior decoration of the reading zone. Assuming that as a rule the truth is in the middle, we notice that the task of the libraries is to attend a vast range of interests of the readers. By realizing this enormous part of libraries the whole space of the reading zone plays an important role, also the height of the readers' equipment, their fresh air and light supply. Thus the best libraries became public treasuries of world's architecture.

At present there remains the challenge to find out the best possible partition of the readers' zone. This has to be done under the aspect of the current tasks of library service, of the increasing numbers of readers, of their changed demands under the conditions of an information society and also under the aspect of the further development of the library's service as an organic part of a homogenously structured information market and information service.

Also it is clear, that the reading zone in the digitized libraries and especially in multimedia libraries is getting larger because the technical equipment of the readers' place is increasing. And if we now have only laptops and computers

in the reading zone, we have to be aware that a place equipped with multimedia needs a lot more space. This doesn't relate only to the technical provision but also to the privacy of the reader, his or her productive work in a multimedia library. This privacy has to be protected by using one or more screens, either by screening or by a special lamination of the screen or by special glass. Between 1960 and 1969 a famous American psychologist, Robert Sommer, undertook research into the psychological condition of the readers in the reading-room. In this study they found out, that every reader who comes during the first hour of opening chooses a place without a neighbour. Only later on when a lot of places are occupied, does he have to look for any place left. Everybody dealing with multimedia in a private creative process always prefers privacy, nevertheless on the contrary it is not proved that single cabins are more advantageous.

The complicated character in the present phase of the libraries' development is the fact that the information society, which we live in, has produced new markets, new products, new ways of communication. If we want to characterize the current situation of this information society with one single word, it would be – globalisation. Globalisation of financial markets, globalisation of communicative connections via the internet, globalisation of economics, globalisation of the job market. But if we project the complete globalisation on man, then the effects of it will turn out as a globalisation of his information survey. And, above all, it will make life more convenient. Globalisation can be only advantageous for people if it brings with it more comfort. This comfort is not a state of rest. This comfort can be considered as being in accordance with the outer living circumstances and the inner need.

But now let us talk about the readers. What does a convenient situation mean to the readers? What does the readers' comfort mean to the libraries?

A market of information has come up. Libraries have a definite position in this market. They shouldn't lose this position. If libraries want to remain competitive in this job market they have to provide a certain level of convenience for the readers. The comfort for the readers is not a generosity of the libraries but it is an attempt to get a chance for survival.

All this shows us that we have to thoroughly consider the whole equipment of the reading zone. Today it is no longer a rectangular room with tables and chairs in rank and file to have room for a maximum number of readers. In co-operation with librarians, architects and psychologists the reading zone can be divided in three areas, but without fixed borders:

- the zone of the intense psychological co-operation of the reader with other readers;
- the zone of partly enclosing in to this mentioned above psychological intensity;
- the zone of complete psychological private sphere (psychological demarcation).

All three of them of course have to be variable. But all three of them should be freely available to the reader.

Precisely this principle of the reading zone for the „individual reader" instead of the reading zone for the „average reader" should - in my opinion - be the decisive principle while planning a reading zone. In the reading zones some glazed cabins should also be installed for multimedia info-studies in which a team of different professionals together can produce a multimedia block with a computer network.

We should never try to put the reader under pressure.

When - for example - the architect Kahn whilst projecting the University Library of Exeter (New Hampshire) planned niches in the reading zone for the individual use and for intensifying the reading work, the students considered it to be a refuge for hard work and refused them in their original intention because they needed communication and eye contact.

Kahn came to the conclusion – according to Glenn Robert Lym - that the chronic locality of a library is determined by the individual being inspired by a book. The book is taken out of the dark archives into the sun light. Thus the sun light also has to enter the building. Then the reader enters the niche, which is the beginning of the architectural structure that the user becomes aware of. The reading zone is impersonal. Although the books are in the dark, they should be visible and available for stimulation. That can be supported by the open shelves inviting use.

Nevertheless a proving enquiry of users showed that the students didn't accept the architectural structure of Kahn (sunlight and niches). Kahn assumes that the reason was, that the students didn't consider the libraries' books in the same way as Kahn did, not as a ritual of inspiration but as a very dry job that has to be done quickly. In this sense the students think of the niches as places of hard work and studies. Concerning the presentation of books - very few of them considered them being inspiring, others even found them off-putting.

The students of Exeter Library don't look at the library as a place of lonely inspiration by and with the book, but as a place of communication. The social centre of the „campus" has moved to the library.

According to this experience - in the opinion of Glenn Robert Lym - the library should have: a department of reference, a department of books and reading and kind of a social department for meeting people without disturbing the others.

That is, the central department of a library should not invite to read via books, although turning over the leaves of free available books is a good thing and should be maintained in the future, but the library should additionally be used as a meeting point.

Different readers need different conditions ranging from solitude to high frequency in the reading zone. Also one and the same reader needs either this or that at different times. I am not sure whether the principle of projecting the reading zone for the average reader is the optimal solution.

Part of multimedia are the electronic books, which in principle supply new possibilities for the reader. Clemens Deider and Rolf Fuhlrott worked out a detailed statement about electronic books.[3] All electronic books have advantages but only one is of revolutionary importance, namely the one developed by assistant professor Joseph Jacobson at Massachusetts Institute of Technology (MIT). The pages themselves were written upon with electronic ink. This e-ink is surrounded by a special foil of 0.2 millimetres thickness and consists out of an innumerous amount of capsules about 0.04 millimetres in diameter, that move between two transparent electrodes. By making them alive, black and white particles of about 0.1 microns move inside the micro capsules to the opposite side, meaning that, according to the order, the capsules turn round to the black or the white side and thus form the desired letters. According to the developer - the MIT assistant professor Jacobson, a resolution of 1,200 points pro inch can be reached with the black and white version. Up to now 150 dpi has been enough for him. As there is no need to permanently build up the pages with the electronic ink, the energy required is minimal. Even without electricity, which has to flow when writing or renewing pages, everything can be read black on white. It hasn't yet been determined how long the face remains stable, and doesn't fade, thus needing to be refreshed. Besides this success the scientific searchers at MIT are already working on a color electronic ink.

According to Joseph Jacobson, up to 500 megabytes can already be saved. While using different flat memories, it would be possible in future to accumulate up to 35 - 350 gigabytes after a developing proper flat memory

card with a quantum-mechanic effect. Talk has started about the future possibility of saving the complete Congress Library onto an electronic book. It doesn't look so bad for advertising, but the important thing for us is, that also static and moving pictures and also music will be accumulated in this electronic book at some point. Readers will get a multimedia carrier which they can use in different ways.

Nowadays there is a discussion about the fields where electronic books can be used. I think this discussion is a bit premature. Without referring to the different positions of the discussion, the electronic books will make their own way as to where they will be successful. The most important thing is that these electronic books as multimedia carriers will be able to change the complete educational process, the whole didactic. These books can bring democracy to the educational system because the scholars and students will be able to take an active part in structuring the teaching material. Everybody can find out their suitable learning strategy. They won't have to follow a certain teacher or a certain professor all the time.

Of course that means, that libraries have to take care about the electronic books, these multimedia books being structured according to the sense of their content. This is not really a new function of libraries, because libraries have always acted as the bibliographic reference for the readers. But the whole range of reference can be deepened and enlarged in the electronic books.

So, neither multimedia, nor electronic books, nor internet-networks are a danger to the libraries, on the contrary they strengthen the bibliographic and informative work of the libraries and they may be considered as an evolution of libraries.

The appearance and the rapid development of computer networks and the computerization of the library process on the whole will result in the alteration of the reading zone and their connection with the stockroom and the internal working zone. As this procedure is occurring without any interruption and creating a dynamic which is getting more and more rapid, one of the most important results will be the fast changing of the centres of reading concentration, of the direction of movement and its spreading in the reading zone.

The use of the own or the libraries' computers by the reader is increasing. The card index will be steadily pushed to the periphery and lose its importance. The readers' motivation will change and also the priority of their self-chosen algorithm concerning the reading zone.

The use of computerized catalogues gains the character of bibliographic service in the reading zone. At the same time the computerized catalogues increasingly alter the bibliographic service into self-service. Thus the competent computer knowledge of the readers is becoming a more important factor.

The development of the information market and of the information service, the increasing competition and the increasing integration of libraries in this market force a more convenient service for the reader and that is the alteration of the librarian service into a library service. Solving this task is getting more important and at the same time more complicated within this difficult situation of the libraries due to their limited financial means.

The unforeseeable tendency of the development of libraries, their position in the information society under the condition of rapidly changing information connection structures, the role of multimedia and the socio-cultural situation demand a transformation of the reading zone. That includes its planning, new and rapidly changing technical equipment, higher demands on the acoustics, new equipment for the working places, their distribution in the reading zone and the setting-up of independent working places, their changing step by step into kind of a business service place with computer, scanner, connection to internet, a silent fax machine etc.

Many library users use the facility for furthering their own education and can get suggestions for intensifying their learning process. When libraries fulfil or even exceed the wishes of the user with their interior alterations, new technical equipment and the possibilities of literature searches, then - as past experience has shown us - the readers will use them even more frequently prefering them rather than a less service-friendly service institution.

It is only natural, that the needs of the reader are given the primary consideration when planning the library and its reading zone. At the same time it would be negligent not to consider the interests of the librarian, the influence of the architectural means on their ability to work, their motivation, their entire psychological state of mind. It would be wrong to presume that creating a reading zone which is favourable to the readers automatically creates pleasant conditions for the librarian. One should also consider at this point, that the librarian must spend the whole day at his work place and that dealing with many of the readers doesn't only produce positive emotions. At the same time, the reader judges the library by its librarian. And so the librarian is given a great responsibility, and the concern for a pleasant working atmosphere is not only a humanitary question, but also a pragmatic one.

This is how the relationship between the reader and the librarian looks. The technical conditions change but the basic relationships remain the same.

As far as the innovations are concerned:

About 34 years ago a well-known librarian, H. S. White, exclaimed: „To the barricades: The computers are coming." That is now history. In the meantime, the computers and computer networks feel at home in the library. We are now reaching a new stage – multimedia library, virtual library. That is the new future, but in a few years time this will be the routine in the everyday life of the library.

There will be new problems, new discussions and new conferences.
C´est la vie …

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