SOME EXPERIENCES WITH MEDIA CONCEPTS IN MUSEUMS

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1. Introduction

The use of computers for the museum management[1] and for archives[2] is effective and undisputed. So are the CD-ROM's which complement the traditional catalogues[3] and the web sites allowing the internet user to inform himself about the collection and the conditions of use[4]. Computer kiosks for individual information retrieval influence already the museum space, requiring a special room, ordinarily outside the collection. Totally new forms are museums with virtual, computer generated objects[5] and purely virtual museums, existing only in the web[6].

With these last forms the real, the physical object, the trusted witness of the past, disappears, making the museum one more place in the more or less arbitrary world of new media. Some museum experts are therefor rightfully cautious in the integration of computer and new media in their collections, while other are making heavily use of them[7].

A good compromise, which doesn't interfere with the traditional museum presentation, are surely portable CD-recorders explaining the objects, characterised by sticked on numbers, in use already in great museums, for instance in the Vatican in Rome and the Rijksmuseum in Amsterdam.

From an historical point of view, museums have been changing their form of presentation. The collections of gifts in the Greek temples showed only the names of the donor. The Roman collections of Greek works of art were not labelled at all, taking their familiarity for granted. The dukes in the renaissance and baroque explained their chambers of rarities and art collections personally to their high ranking visitors. The very short labels on the art works of the museums of the 19th century had the high educational standard of the upper class visitors as a prerequisite[8].

The present paper deals with the problems of smaller, local museums which don't have so many and precious objects as to attract visitors unconditionally, especially from the younger generation.

Main problems in these museums seem to be: too few exhibits or not enough room to show them in the museum, a dry traditional presentation with showcases and explanatory inscriptions and a certain lack of historical or cultural background on the side of the visitors.

The question therefor is: how can new media and computer techniques be used to make museums more attractive on the one hand and not dominate the real exhibits on the other? How can those new techniques be implemented in such a way as to form an integral and natural part of the museum?

The ideas outlined below stem from work with museums in Thuringia, Germany, realised as students and research projects at the faculty of media of the Bauhaus University at Weimar.

2. Principles of the media concepts

In the development of the various concepts described in section 3 we have tried to follow some general principles.

a) Implementation strategy

Media concepts can only be implemented successfully if the impulse comes from within the museum and the museum people determines aims and contents.

The best way to assure this "content driven development" is for the media designers to closely co-operate from the very beginning with the responsible from the museum.

b) Goals for the visitors
Emotionality

The installation should not only convey information to the visitor but arouse his interest, make him feel the importance of the presented objects or story for his own life and give him an emotional impulse. Other museums projects have stressed this point also [9].

Interactivity

If possible the visitor should be active in the museum, have the possibility of choosing among several variants, giving his museum visit an individual aspect. These choices could be, besides the choice of the language, the objects or themes for which he would like to have an explanation and the level of information, from short comment to full expert information

The installation should avoid the impression of a simple automaton. The system reactions should vary if the visitor repeats an action. The techniques to assure this are well known, they rank from random selection to techniques of artificial intelligence.

c) Design principles
Binding to the location

The installation should make maximal use of the specific architecture and structure of the museum in order to make it unique and typical. Physical movement, walking through various rooms, climbing staircases, touching something are important. A CD-ROM can be played everywhere, a good installation has a fixed place.

Dominance of the physical objects

The physical objects in the museums collection should dominate in the presentation, the museum should not degenerate into an auditorium for a slide show or a video presentation.

Hiding of the technique

Computer screens, keyboards or mouse pads have long since lost their attraction and should be hidden. For interactions more natural techniques like stepping mats, touch or infra red sensors should be used.

In the future the most flexible means seems to be the computer analysis of video recording of the visitors face, gestures, positions and movements[10].

3. Concepts for museums in Thueringia

All concepts were realised by contract and in close co-operation with the museum, the results were presented as prototypes using the technique of the Bauhaus University.

3. 1. The house of the Romantic at Jena ("Romantikerhaus")

The museum uses the former residence of the philosopher J.G. Fichte with three floors.

It shows objects from the early romantic period in literature and the corresponding development of the natural sciences.

The media concept concentrates on three rooms, where the technique is integrated in a traditional setting.

a) Philosophers room

On a lectern in a miniature lecture room lies an open Book with the titles of short audio sequences on philosophical themes, mainly by Fichte. The visitor can choose a sequence by pressing a button at the side of the title and the sequence will be read.

The buttons are extensions of an Audio-CD player; by pressing one button the corresponding track is played.

b) Saloon conversations

In a saloon with historical furniture several objects are sensitive to approximation: portraits of poets and their wives, a book, a piano etc.

On entering the room the visitor hears a mixed up conversation at a relatively low acoustic level where the contents are barely discernible.

If the visitor approaches one object the part of the corresponding person becomes clearly audible, his or her opinion can be heard. After a defined period of time this persons sequence again becomes part of the background noise if it is not sustained by a new activation.

Each sensitive object has a infrared sensor an endless playing CD-recorder and a special wiring which on an impulse from the sensor amplifies the output of the recorder for a defined time.

c) Virtual theatre

A small real scene is equipped with a back projection screen (frosted glass) as background and two loudspeakers; behind the scene a variety of devices can be used: a computer, videobeamer, slide projector, overhead and video projectors. The stage can be used for several purposes.

Real theatre presentations can use the screen as a static or moving background. The computer can play animated sequences. For instance a sequence with background music was realised about romantic painting. Ordinary slide shows, lectures with overhead projections or the showing of video films are possible also. In a further step an interactive information system or even computer games with the participation of (young) visitors can be realised.

The concept was implemented in September 1999 and is now part of the museum presentation.

3.2. Town museum in Jena ("Goehre")

The museum presents objects from the history of the town, products of handicraft, objects of art and documents. The concept of the common museum presentation is not yet defined and the media part had to be designed as a separate installation.

In a mediaeval vault a "time machine" is installed which allows the visitor to travel through the centuries in the town. The machine reminds with its brass tubes a command post from 19th century science fiction vehicle and has the following devices.

The "time lever" allows the visitor to move backwards and forwards in time or come to an standstill in a chosen or period. On a screen on the wall an initial picture in 3D of the town in the corresponding time is displayed.

The two "movements levers" allow the visitor to move forward or stand still and rotate in the environment at a fixed velocity.

With this equipment the history and the architectural environment of the town can be explored.

Especially for children a game has been conceived to explore the middle ages as a virtual travelling journeyman who has to find the seven landmarks of Jena as a proof of his having been there.

In the town he encounters different people which can help him in the search. An encountered person in the town speaks, like in real life, if the visitor confronts him a certain time at speaking distance.

The concept will hopefully be implemented, beginning in 2000.

3.3. The Art Collections at Weimar

The collections in the castle are about to open two new departments: history of the castle and the chamber of rarities, for both media concepts have been developed .

a) Chamber of stories

In a separate part of the history exhibition, in an mediaeval vault, stands a back projection screen in a baroque framing. Columns are distributed in the room which have small objects on top, representing parts of the history of the castle, for instance a melted glass reminds of the great fire.

If the visitor touches one of the objects, it is illuminated by a spotlight and on the screen appears a person telling the story and showing corresponding pictures. To one objects several stories can exist which are told on sequential activation's.

The objects have electric touch sensors which give input to a computer activating the corresponding video sequence.

b) Sphere of imagination

An oval screen as part of the chamber of rarities shows a slowly moving introductory sequence when no action is performed by the visitor. The interactive device is a rotating globe with inlaid sensitive objects on its surface. The actual position of the globe is continually projected on the screen as part of the video.

In rotation the globe and touching an object a video sequence is activated which gives an explanations to a specific part of the collection (ivory carving, clocks, ...).

The loudspeaker is installed in the focus of a spherical vault above the globe so the sequences can only be heard under the vault, the rest of the room is almost quiet.

c) Orbis Pictus, the great book of the collection

As in the real chambers of rarities a great table with an armchair is provided for deeper studies A computer projection from below on the tables surface simulates a great book in which the visitor can read sequentially or seek certain themes or objects in an index by touching the corresponding parts.

On the table are further duplicate objects from the collection in a shelf. By taking an object out of the shelf a robot servant in the style of the 17th century, standing at the table, explains it.

3.4. Theatre Museum at Meiningen

The museum has original stage settings from the 19th century for which a special building without natural light has been prepared which allows to show one complete stage setting with real stage lighting. This installation takes some time to be hanged, it will be changed about twice a year.

Two great screens about 6 x 4.5 sq. m at the sides of the room and one movable screen in front of the stage allow projections from three video beamers.

In projecting on the three screens the room is changed into an virtual space which can be used for different purposes.

In addition to the real stage setting other stage settings, drafts and photos of costumes, texts or scenes from different performances of the same piece can be projected.

A history of the theatre at Meiningen and its influence on the theatre art in the 19th century could be shown.

In workshops the stage designs of the participants, realised as computer simulations, could be projected in almost full size for evaluation.

At last the room can be used for social or artistic events as an attractive and unusual environment.

The concept will be implemented in the year 2000.

3.5 Albert Schweitzer Museum Weimar

The work in progress for this museum shall create an interactive environment, reflecting the live, the works and ideas of Albert Schweitzer.

The museum has the problem that only very few original objects are available and that the house itself is relatively small and has no direct association with Schweitzer (he never visited Weimar).

In the rooms a decent acoustical atmosphere will be created, some objects will be sensitive. A great back projection screen integrated into one room will show sequences from his live and works or from the works of other Schweitzer organisations .

A special internet server will connect dozens of Schweitzer school's world wide and allow the exchange of articles, project descriptions, or at the highest level the real-time broadcasting of events.

The concept will be implemented, beginning in the year 2000.

3. Concluding remarks

For smaller museums the new digital media and computer techniques can significantly raise the attraction, especially for the younger generation, without destroying the character of the museum as a place of authentic objects.

The emotional impression of a museum can be significantly strengthened by the parallel use of several media, by providing a rich historical or environmental background and the possibility to interact with the exposition and to shape an individual museums visit, reflecting specific interests and inclinations.

New findings, related to the museums contents, can easily be integrated, provided the media presentation has a modular character. Dynamic processes, like town development, can be better presented, complex facts, like the dynastic structures of historical Germany, can be shown more clearly.

4. Literature

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[4] See also the last conferences „Museums and the Web" 1998 and 1999 above all the chapter Best of the Web.
[5] E. g. The Computer Museum, Boston.
[6] The Virtual Museum of New France, Canada. Museu da Pessoa, Brazil.
[7] Kunst- und Ausstellungshalle der Bundesrepublik Deutschland, Bonn.
[8] Nikolaus Pevsner, A History of Building Types, Washington 1976, German edition Hamburg 1998, 111. A.S. Wittlin; The Museum, its history and its tasks in education, London 1974.
[9] In 1999 Turpin Rosenthal opened an exhibition in Weimar, that aims very much to the emotions of the visitors and so it connect education and entertainment in an own way.
[10] ICHIM 1995, 217-234.