EXHIBITION COMMUNICATION

Translation and adaptation from the Hungarian original: Andrea Kárpáti, language editor: Bob Dent of Szavak Bt.

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by Andrea Kárpáti and Tamás Vásárhelyi

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Chapter 1. Introduction

"What do you see?" If the designer of an exhibition ever asked this question, the visitor would certainly provide a variety of surprising answers. Exhibition evaluation studies show that not only a work of art inspires different interpretations, but also an exhibition, organised in museums, galleries and other public spaces, has a message of its own. Some of these interpretations may be contrary to the intentions of the curator or exhibition designer. The personal approach of the visitor is described by Hugh A. Spencer as a process influenced by motivation, beliefs and values, as well as previous knowledge and experiences. (Spencer, 2011, p. 373). Until recently, visitors were perceived as disturbing intruders in the museum functioning mainly as a research centre. Today they are appreciated, because institutions have embraced the role of educational facilities. (Mayer, 2005).

Most museums, galleries or science centres are subsidised by state organisations, (that is, by taxpayers) or civil organisations also representing the public. Visitor opinion counts, because it influences attendance figures, has an impact on the decisions that sponsoring organisations and individuals make, and fuels an important method of advertisement: word of mouth. Thus the views visitors express about the museum ultimately influence the working conditions of the institution and affect the potentials regarding expansion of facilities and collections. Today visitor satisfaction directly affects the quality of professional life of staff. Therefore, exhibitions must communicate a clear and convincing message about the mission and functions of the institution that houses them. This volume describes methods and means of this communication process.

Communication is an important design element of the planning of exhibitions. In this book, we describe how curators and exhibition designers formulate and evaluate their messages. Our work is intended for all those who exhibit art and science in any form – in a school showcase, a shop window or in a gallery space – in order to transmit information, knowledge and experiences. As this process usually occurs in museums, most of our examples stem from their exhibitions. By the beginning of our century, museums had shifted emphasis from collecting to exhibiting. The "*Wunderkammer*" [1] of rich collectors, accessible only for a few friends, became an open resource for public education. *Interpretative exhibition planning* (Spencer, 2001) is the theoretical model we want to focus on in this book, with visitor experience and understanding in the centre.

Exhibitions may reveal astonishing new discoveries, or works of art with international professional acclaim, but if they are unable to enchant their audience and make people reflect and be enriched by knowledge relevant for their lives, they cannot be considered successful. Therefore, we begin this book with a discussion of major forms of museum communication and their objectives. We continue with an illustrated overview of museum spaces to show how architectural arrangements contribute to visitor experiences. We follow the history of the museum building from the first private collections opened to the public up to the social spaces of the contemporary museum.

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[1] The German word, *Wunderkammer*, literally means chamber of miracles. From the 16th century the word has been used for a chest of drawers or small room housing a mixed collection of art objects, interesting tools and demonstration materials for scientific experiments, nice plants, stuffed animals, skeletons, gems, etc., gathered by collectors.

1.1. picture: Museum educator greets visitors at the gate of a historic monument. Dresden, 2011. (Photo: Andrea Kárpáti)

1.2. picture: „Museums are NOW" – giant poster of the campaign about the relevance of museums in the 21th century. 2009, entrance of the Museum of Contemporary Art, Chicago. (Photo: Andrea Kárpáti)

Both the content and format of museum communication is influenced by the mission statement of the institution. This core document is the subject of our fourth chapter as it defines exhibiting and collecting strategies and is the basis of all decisions about how to communicate the shows. Social and scientific messages of exhibitions are inter-related and both are present in museum communication. The most important factor in the communication process, however, is the collection of the museum, constituting the basis for permanent and temporary exhibitions. In chapter five, we show how choices of new areas of collecting or expanding existing collections influence exhibition strategies. When planning a show, selecting the type of exhibition profoundly influences subsequent communication. In chapter six, we show how different types of exhibitions result in different communication strategies. Translating the messages of an exhibition into different media inside and outside the show is a difficult task jointly undertaken by curators, media specialists, educators and journalists. In most cases, a wide variety of visitors have to be approached and communication should be both understandable and exciting for all these groups. We also discuss methods of transmitting scientific and social content to the audience in chapter six, too.

Channels of museum communication include but are not restricted to the media we encounter daily. In chapter seven, we outline the organs and genres of communication that may be used for reaching the museum visitor. Decisions about returning are also influenced by the perception of the institution by the local and national community. As the communication environment becomes more and more virtual, we discuss multimedia and social web applications used for reaching visitors. When planning and developing museum communication tools, the main questions is always, if museum visitors will actually perceive and comprehend the messages conveyed. Therefore, our work is focused on the museum visitor: his or her values, aspirations, ideas and previous knowledge related to the content and form of the exhibition visited.

The book concludes with a reading list that also includes works not directly referenced in this work but that are nevertheless important for further studies about museum communication. Exercises included in all the chapters help interpreting ideas presented and elaborate a personal viewpoint. These tasks also facilitate the acquisition of methods described and integrate them with experiences at exhibitions. Illustrations are mostly documentary photographs taken by the authors in museums and other exhibition facilities. In some cases, photographs illustrate a phenomenon that occurs in many museums and therefore we do not name the museum where the image was actually taken.

The authors of this book, Andrea Kárpáti and Tamás Vásárhelyi, are founding staff members of the *Master of Science Communication* degree program at Eötvös Loránd University, Faculty of Science. One of the main content areas of this course is *Learning in Science Museums*. Our colleagues at the Program and other experts interested in museum education were instrumental in assisting us in the compilation of this textbook. One of them, Emil Gaul, has authored part of a chapter, others contributed with case studies to the Hungarian version. Two documentary films were prepared for this book by Veronika Werovszky, science communicator and filmmaker, and a simulation for showcase light effects by Ádám Kuttner, science communicator and IT specialist –both graduates of the first class of the Master in Science Communication program at ELTE University.

Acknowledgements
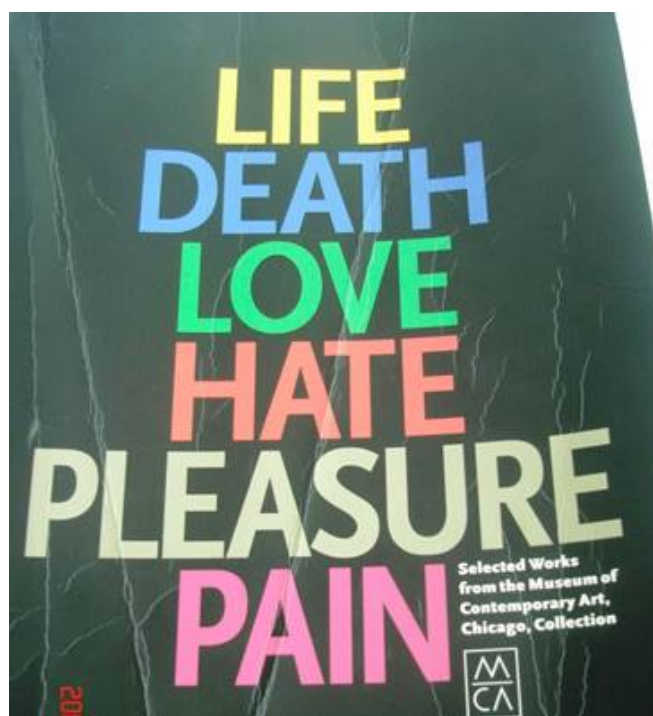
1.3. picture: Poster showing the relevance of museums through a list of themes represented in works of art of an exhibition at the Museum of Contemporary Art, Chicago, 2009.

Chapter 2. Aims and objectives of museum communication

(Tamás Vásárhelyi)

2.1. Communication theory and museum communication

The central theme of this book is museum communication. As an introduction to the topic, it seems appropriate to indicate its place and role among the forms and genres of communication. In the middle of the last century, in 1948, Claude E. Shannon published the mathematical model of communication. (This model is based on the theory of N. Wiener and often referred to as the Shannon-Wiener model, published later in Shannon, Wiener and Weaver, 1963.) This theory introduced concepts that have been used ever since to describe the communication process: *source of information, sender, message, sign, channel, noise and receiver.*

This theory, also called "*the mother of all communication models*", has often been criticised for describing the process as a one-way alley, disregarding feedbacks and secondary processes directed by the receiver towards the sender or the message. However, if we want to describe models of contemporary social media, we may utilise similar concepts.
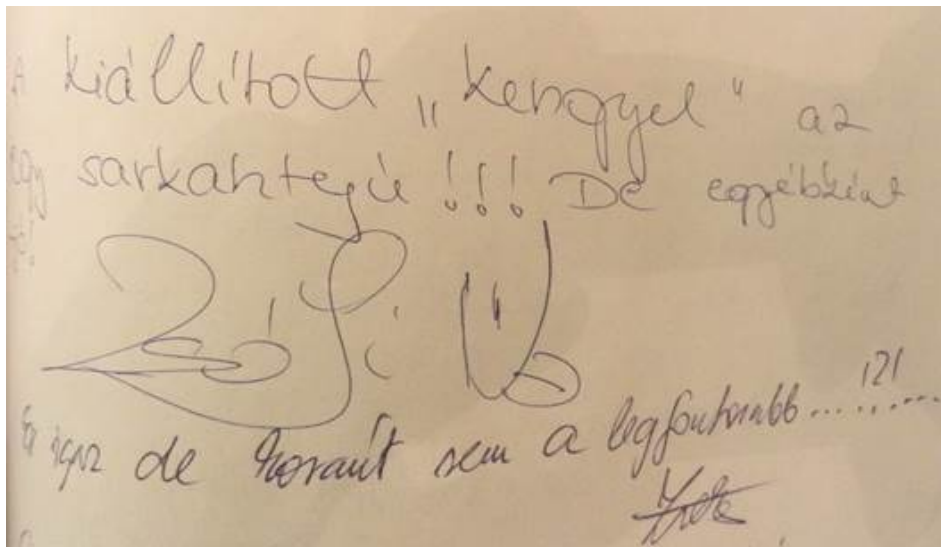
2.1. picture: Double feedback: audience dialogue on the pages of an exhibition guestbook.

In order to understand the process of exhibition communication, we can utilise an adapted version of the model where feedback – a feature very often absent or inappropriate in many exhibitions – is also integrated. [1] Let us assume that the curator has a message to convey in his or her exhibition. Thus we have a *message* and a *sender* of this message. The sender – or the person on his or her behalf, the exhibition designer – *translates* the message into the language of exhibition communication, and transmits it, using the communication *channels* provided by the exhibition, to the *receiver*, the visitor. The receiver notices and decodes the *signs* and *transforms* them into sensations and ideas. Thus the *decoded message* comes to life. Let us discuss the elements in the diagram below one by one!

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[1]We will see later how important evaluation or structured feedback can be in the process of modern exhibition design and development.
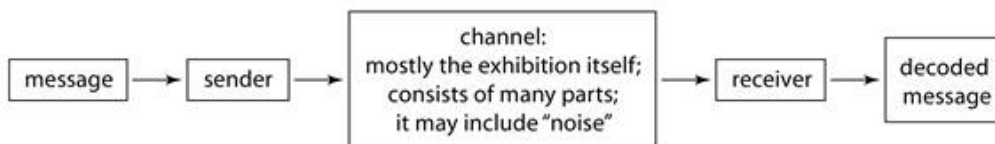
2.1. diagram: Generalised and simplified model of exhibition communication, based on the Shannon-Weaver communication model.

Message: in the case of commercial exhibitions, it may sound like this: "My product is the best: it even enhances your personality! Fall in love with it, yearn for it, buy it!" In the case of a national exhibition boosting the image of a country: "Hungary is the land of classical music (or salami, or any other characteristic national product), we are world leaders in this area!" In the case of a museum exhibition: "Munkácsy[2] is an outstanding painter, whose amazing oeuvre is generally appreciated." Or perhaps: "Nature is interesting, beautiful and vulnerable, worthy of our attention and protection."

2.2. picture: The meaning of the scent of the flower (Oenothera biennis) that blooms after dusk:" I have nectar!" The butterfly (a Macroglossa stellatarum) feels the scent, and does its duty: the pollination of the flower. This process can be interpreted as the unwitting receipt of an unwitting message - that is to say, there is no direct communication (also, no misleading intent). Similarly, unwitting exchange of messages also often occur among human individuals. (Photo: Tamás Vásárhelyi)

Sender: it can be a private person or a company, sponsoring the exhibition. The sender can be a researcher, the developers of the exhibition – usually more than one person. It can be the artists, too, but most often he/she exhibits his or her work in a gallery, so he / she has to rely on museum staff for the transmittance of the message of the artworks. The one (or many) who formulate(s) the message is included in the left part of the diagram above. In this case, the sender is the person who formulates the message.

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[2]Mihály Munkácsy: 19th-century Hungarian painter in the style of patriotic Romanticism and Realism; a winner of several Gold Medals and other recognitions of excellence at exhibitions in Paris. According to several art knowledge surveys, he is the most famous Hungarian painter.

2.3. picture: Unambiguous message, unambiguous sender. (Photo: Tamás Vásárhelyi)

2.4. picture: Above the lamp switch, there is a list of names of exhibition developers. The intended message is a tribute to them. An unknown sender included yet another message, a simple Xerox sheet with a review of the exhibition, thus contributing, anonymously, to the information about the show. (Photo: Tamás Vásárhelyi)

Translation: appropriate communication channels and tools have to be found for the more or less articulated message (that is often blurred and only partially formulated). Translation means a different process for exhibition design than for the compilation of the catalogue or family booklet.

2.5. picture: What can the message of the selection of this tent as an event venue be? Environmental consciousness is better transmitted through collective creation out of discarded materials than the slogan banner in the background). (Photo: Tamás Vásárhelyi)

Communication channel: in communication theory this concept has a rather dry description. „The channel is the phase in the communication process that unites the data source and the data consumer." However, data may have different characteristics, from easy and simple to complex and sophisticated. Channels of communication in real life are, among others, speech, writing and body language, perhaps also the use of tools for messaging. Forms of communication in dictatorial systems include public punishment or the declaration of regulations. Exhibition communication is also multifaceted: the venue, mood, colours, furniture, objects, images and sound bites (or, less frequently, tactile sensations) all belong to the repertoire of exhibition communication. Supporting documents like the catalogue, leaflet, flyer, task sheet, guided tour, live presentation or a virtual tour accompanying the real experience are also important communication tools.

2.6. picture: In the Museum of Postal Services, Budapest, many older visitors are nostalgic about old telephone sets and are pleased to use them again. If you pick up the receiver of the "Tell-a-Tale Telephone", you can listen to folk tales and short stories. It is a well-suited communication channel for the 50+ generation. For children, however, it conveys another meaning: phone receivers used to be heavy and were supposed to be hand-held during the conversation. (Photo: Tamás Vásárhelyi)

Receiver: for museum exhibitions, the receivers of messages are the visitors – including professional ones, the reviewers and critics. For trade shows, business partners and customers can be considered the most important receivers.

2.7. picture: It is very difficult to communicate with several generations of visitors at the same time. (Photo: Tamás Vásárhelyi)

Decoded message: in further chapters, we will discuss the circumstances that influence the types of impressions, assumptions and knowledge elements that are elicited in viewers by an exhibition. As a response to the types of messages cited above, we are likely to encounter the following responses, from sincere acceptance to repulsion: "Munkácsy is an outstanding painter whose oeuvre is generally appreciated – and I quite like him, too!" "Munkácsy has painted quite a lot of pictures – I'm sure he made a lot of money selling them, too!" Or else: "Munkácsy is our hero! The whole world is admiring him!" "What a beautiful and realistic rendering of flowers and people – although less would be more, I think, this gallery wall is overcrowded!" "To hell with these harsh-

coloured daubs!" It is important to emphasize that distorted messages are not only caused by bad exhibition design or interpretation, but also the social surroundings and the mindset of the beholder.

2.8. picture: An evident example of the inappropriate "reception" of a work of art, unintended by its creators and sponsors. (Photo: Tamás Vásárhelyi)

Noise: this expression for disturbances in the communication channel date back to the early years of landline telephone services. The machine forwarded human voice with scratching noise and distortion. The quality of the sound at the receiver's end was very different from the voice of the speaker. Nevertheless, speech could still be understood, but the pitch and rhythm of voice was less varied. (This is a situation similar to chatting in a noisy environment.) Noise can occur in many phases of exhibition communication. For example, the viewer hates the hue of the background colour we used for the showcase, so she closes her mind and perceives very little from the objects exhibited. Another problem may be the quality of the text: if it is incomprehensible, the visitor stops reading at once – and she does so if the lettering is too small, too, not wanting to tire the eyes. Another inhibiting factor for messages to get through is the scope of the exhibition. If it is too large, visitors get tired, start to hurry towards the exit and scan objects or read text only superfluously on the way. On the images below, you can see some sources of communication "noise".

2.9. picture: Details of an overcrowded, incomprehensible exhibition, the key elements of which (the two giraffes) are tucked away in a corner. (Photo: Tamás Vásárhelyi)

2.10. picture: Overcrowded exhibition space with a normally frightening dinosaur looking strange, almost ridiculous. (Photo: Vásárhelyi Tamás)

2.11. picture: Because of lack of space, three groups of objects of entirely different nature are crammed in a small space by benevolent exhibition developers wanting to display as many items as possible. Decorated cast-iron stoves, important and attractive objects themselves, are degraded to the role of platforms. (Photo: Tamás Vásárhelyi)

2.12. picture: Images of worn and torn objects are repulsive for visitors if decay is not a natural process of aging. (Photo: Tamás Vásárhelyi)

2.13. picture: Glass surfaces or shiny tiles on the floor reflect light and spoil the homogeneous visual effect. In some cases mirroring makes proper observation and enjoyment impossible. (Photo: Tamás Vásárhelyi)

The examples shown above demonstrate to what extent "noise" is able to reduce or even endanger the achievement of our exhibition communication objectives. All these elements will be discussed in detail later in this book.

2.2. The role of exhibitions among museum functions

It is generally accepted that museums have three major tasks: *collection, safeguarding and publication*. However, not all authors mention these three elements together. Today, all of these activities may be accompanied by intensive communication campaigns. For example, a staff member of the Natural History Museum in London keeps a blog on the museum home page about his arduous experiences while collecting mosquitoes in Africa. Proofs of successful safeguarding are the showcase storage rooms, the digital collections with objects and their metadata and descriptions.

Even the designation of "publication" as an activity indicates that this is the major element of the communication process in museums. In addition, museum activities that are unattached to collecting and research (management, administration, economic planning, etc.) cannot be undertaken without certain communication activities. Here, however, we only discuss how exhibitions are used as platforms for communication.

2.14. picture: The first Hungarian showcase storage room was installed at the Szentendre Open Air Museum (Skanzen). Huge wooden forks attached to the plain white wall through a wooden structure evoke the attention of the visitor only through their attractive arrangement. (Photo: Tamás Vásárhelyi)

Let us group communication activities according to their *target populations.* Who are the intended recipients of the message? Most museums define themselves as research institutions and therefore, their most important target group consists of fellow researchers: museum staff working with the same type of collection, experts at universities, research institutions, and, in many museology areas, also private collectors. Museums turn to them with research reports (mainly bulky monographs), collections of studies, catalogues and journals, or papers published in journals edited by other members of the field of science. Conferences and workshops with presentations and discussions are lively, personal means of communication. At these events, personal and professional communication forms are integrated.
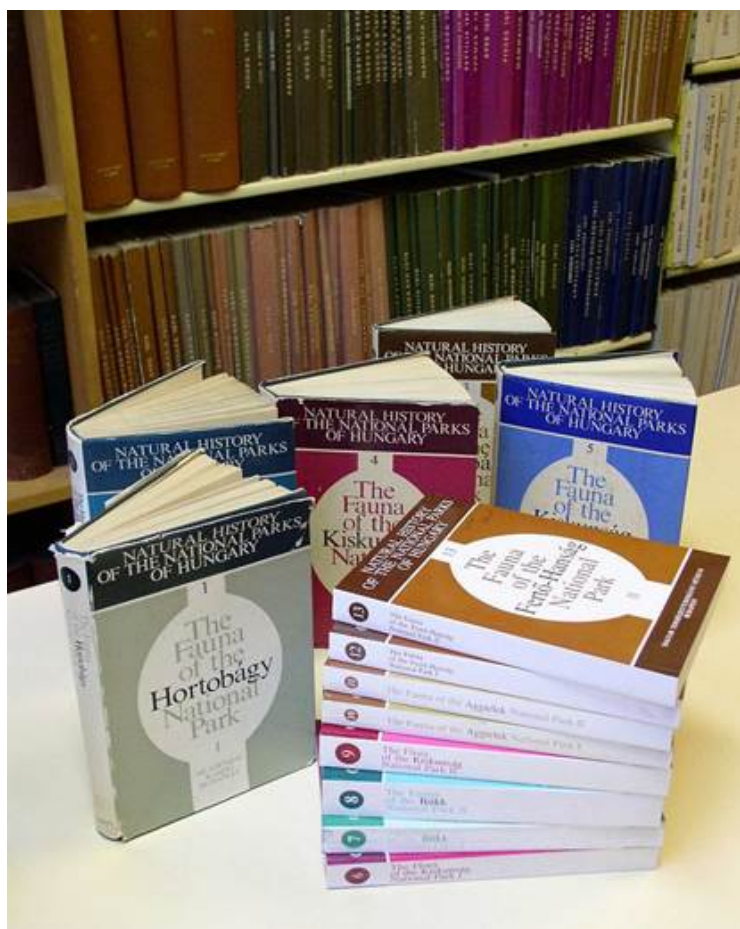
2.15. picture: Publishers attract the research audience through increasingly colourful title pages. (Photo: Tamás Vásárhelyi)

The exhibitions – with the exception of smaller study shows – are not intended for communication among researchers. Nevertheless, in many cases the curator or museologist clearly has his or her peers in mind when making decisions about exhibition communication and choosing its dialect and frame of reference. (Well, to be self-critical: the sentence you have just read is also not intended for readers of glossy magazines!)

2.16. picture: For the geologically untrained visitor, making meaning of this showcase (recent replica of a 19th century item of exhibition furniture) is rather difficult. (Photo: Tamás Vásárhelyi)

Wider audiences – or, to use a more contemporary phrase, exhibition users – have recently become an important target group for more and more museums. On the eve of modern museology, it was the erudite and ready-to-learn elite that were approached, and it was a matter of common understanding that visitors shared the interest and also some of the professional knowledge of museologists, and therefore were able to comprehend and appreciate the exhibition based on results of research. These exhibitions barely contained text. Objects were labelled to be iden-tifiable in catalogues. Guides were knowledgeable, mostly male museum staff members with a narrative style you can easily imagine.

2.17. picture: Part of an exhibition which is a delight to the eyes of one of the authors of this book, a biologist by training, but which lacks meaningful information for laypeople. However, this train of thought may be reversed: laypeople may marvel at the sight, even if they do not understand the message of the scientist-exhibitor. (Photo: Tamás Vásárhelyi)

The opening-up and democratisation of the museum requires, however, that non-experts should also understand and appreciate the messages of exhibitions. Around the eve of the 20th century, didactic installation pieces, explanations attached to objects and items placed in a setting modelling their natural environment (interiors, diaporamas – showing stuffed animals in their natural setting – or scale models and mock-ups at least) appeared in exhibition halls.

2.18. picture: A mural and soil section explain (for children and gown-ups alike), how the giants of ancient seas got "imprisoned" in the soil. (Photo: Tamás Vásárhelyi)

2.19. picture: An installation placed on a high shelf to avoid damage (and thus can be seen by adults only): reconstruction of the cabin of a ship, presented by the mock-up maker In its original format, this cabin would occupy a huge space at the exhibition. (Photo: Tamás Vásárhelyi)

2.20. picture: A special type of diorama. The cityscape is seen from a "bird's eye view" – birds of the city are flying around us as we stand in the balloon cabin. (Photo: Tamás Vásárhelyi)

2.21. picture: Even without figurines, interiors help us imagine or remember the everyday culture of living in ages past. (Photo: Tamás Vásárhelyi)

In the second part of the 20th century, exhibition communication developed further and produced publications intended for the public at large: exhibition guides, illustrated catalogues, and – with contemporary phrasing – publications for museum learning: task sheets, exercise booklets, discovery leaflets. Encounters of museum staff and visitors happened outside the museum building, with the help of the media: broadcasting, television, the press, the moving picture and popular publications by the education or science communication press. These means of communication have broadened the potentials of museum staff to deliver messages about exhibitions.

2.22. picture: Even without understanding the text, we can see which part of the publication is intended for children and which for grown-ups. Children are approached through images and shorter texts printed with larger letters.
(Photo: Tamás Vásárhelyi)

2.23. picture: Three book covers about the same topic, but with entirely different diagramic design.

The information technology revolution has also embraced museums. After the creation of static and later dynamic home pages, computer screens appeared at the exhibitions and museums appeared in different segments of the internet: on social web sites as well as in virtual professional communities. Today more and more museums find it important to update their Facebook pages regularly, and several exhibitions are introduced through the curator's blog. (For more about multimedia applications in museums, see Chapter 7 of this book.)

2.24. picture: On the home page of the Esterházy Palace in Pápa, Hungary, a click on any area of the main menu activates the voice of the "little Baroque girl" who offers the services of the museum.

Museum communication formats and possibilities are wide-ranging. In this book, we concentrate on exhibition communication solutions, but will also introduce methods of communication about the exhibitions. The tasks below invites you to use communication channels described in this chapter.

Task 1:

Formulate three different messages, using the photo below. (In reality, the process is the opposite: we have an exhibition message and find a suitable image to visually support it. However, the process of matching text and image to creative an impressive whole may be modelled through this task.)

2.25. picture: An exciting encounter at the exhibition of the Zoological Museum in Copenhagen. (Photo: Tamás Vásárhelyi)

Task 2:

Please enumerate the methods and channels of communication that you can identify in the picture that shows a group of American, Dutch, Canadian and Hungarian experts summoned in front of the Drents Museum. (Channels are not necessarily attached to one message only.)

2.26. picture: In festive mood. (Photo: Tamás Vásárhelyi)

Task 3:

Identify at least four disturbing elements on the picture below that are out of place and thus hinder the communication of the exhibition and prevent visitors from experiencing the age and the topic represented.

2.27. picture: Exhibition with evidently disturbing factors. (Photo: Tamás Vásárhelyi)

Task 4:

Visit the home pages of the Museum of Fine Arts, the KOGART Gallery, the Hungarian Museum of Natural History and the Hungarian Museum of Agriculture. Fill out the chart below to summarise how many and what kind of communication devices are used in each.

Name of the museum	Target group	Printed educational materials	How many of each
Example: Gingerbread Museum	children	exercise leaflet	3
	gingerbread makers and house-wives	book of recipes	1
	researchers	monograph	2

2.1. table: Example for the solution of task.

Task 5:

Who may the target group for these publications issued by different museums be? Explain your choices!
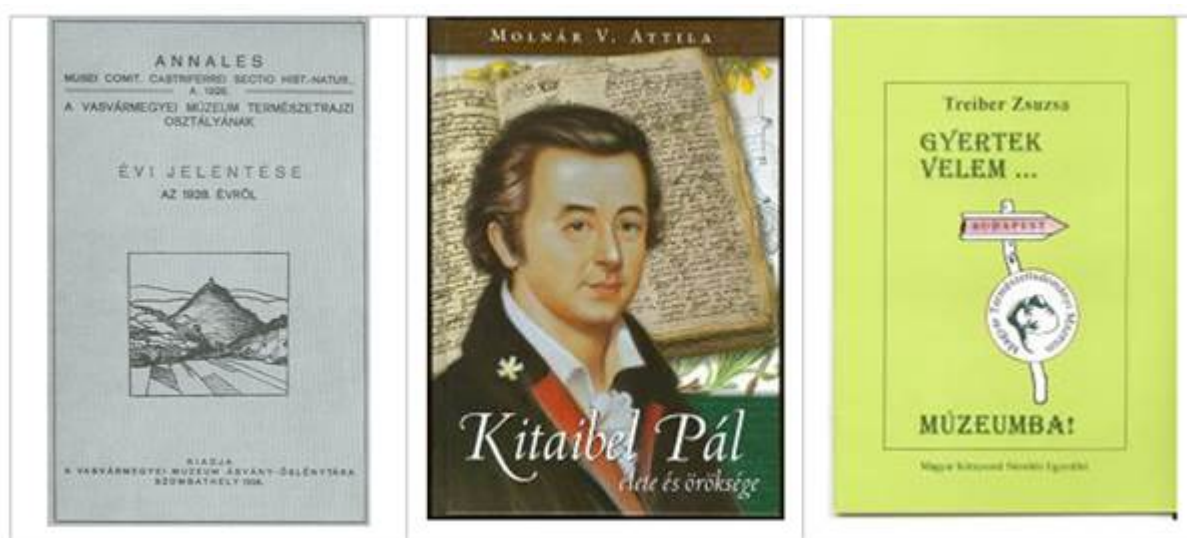
2.28. picture: Three different title pages, evidently for different audiences. (The first one is an example of journal cover design from the first third of the last century - what a difference from those issued today!)

Further reading

A Manifesto for Museums (2004). Building Outstanding Museums for the 21st Century. www.museumassociation.org

Falk, John (200a). *Identity and the museum visitor experience*. Left Coast Press, Walnut Creek, CA

Janes, Robert R. (2009b). *Museum in a Troubled World. Renewal, Irrelevance or Collapse?* London and New York. Routledge

Janes, Robert R. (2009b). Are Museums Irrelevant? The Palazzo Strozzy blog. http://wordpress.netribe.it/palazzostrozzi/?p=50#more-50

Kuno, James szerk. (2009). *Whose Culture*? *The promise of museums and the debate over antiquities*. Princeton University Press, Princeton and Oxford

Simon, Nina (2010). *The Participatory Museum*. Museum 2.0, Santa Cruz, CA

Chapter 3. Exhibition spaces and exhibitions – past and present

(Andrea Kárpáti)

3.1. The communication value of museum buildings

"*Identity Politics – the Uses of the Past and the European Citizen"* is the title of a project in which national museums from Europe discuss one of the most important tasks of their institutions: fostering national identity in a scientifically appropriate and emotionally powerful way. EUNAMUS (the abbreviation) emphasizes the three main components of this identity: European, national and museum oriented values. [1]

ARTools – Art as a tool to understand changes

3.1. picture: Four museums – buildings that express important characteristics of museums on the home page of the ArTOOL Project: CIAP, France, GAMeC, Italy, Malmö Konsthall, Malmö, Sweden, Art Hall, Budapest[2]. (Photo from the home page of the project)

Results of the project show how museum communication changed in the last one and a half centuries. The museum, once the eternal resting place of cultural memorabilia and masterpieces of art and science, has evolved into a decisive component of our national identity. It evokes patriotic pride but may also inspire nationalist activities that turn one nation against the other. The space of marvel and curiosity became a venue for discussion and education. This change of function has also affected the design of the buildings. The classic, pompous and elevated, architectural style of the museum has turned into a work of art that also has a variety of utilitarian functions. The contemporary museum sometimes resembles a shocking piece of modern sculpture, sometimes a minimalist design product, but is always a strong statement by the sponsor, architect and staff about the role of the museum in contemporary society.

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[1]Identity Politics *? The Uses of the Past and the European Citizen. EUNAMUS* (European National Museums), project home page: www.eunamus.eu)

[2]ArTOOL Project: participants are CIAP, Centre International d'Art & du Paysage, Ile de Vassiviere, France ; GAMeC, Modern and Contemporary Gallery, Bergamo, Italy; Art Hall, Budapest, Hungary, and co-ordinator: Malmö Konsthall, Malmö, Sweden ;

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3.2. picture: Santiago Calatrava Valls: Milwaukee Art Museum, Quadracci Pavilion, 2001, Wisconsin, USA. (Photo: Andrea Kárpáti)

3.3. picture: Santiago Calatrava Valls: Milwaukee Art Museum, Quadracci Pavilion, 2001,interior, Wisconsin, USA. (Photo: Andrea Kárpáti)

3.4. picture: Santiago Calatrava: Milwaukee Art Museum, Quadracci Pavilion, 2001 interior, with a view on the Great Lakes, (Photo: Andrea Kárpáti)

Classic museum buildings

The archetypes of museum buildings are *the palace and the church*. The role of the presentation of works of art in a church was to show a collection of objects of piety and demonstrate the power of God (and those who are instrumental in an encounter with Him). Although decoration included valuable paintings and sculpture, most precious objects were safely stored in treasuries and sanctuaries and seen on rare, festive occasions by a selected few only. The palace, on the other hand, boasted of its treasures constantly on show for guests – but commoners, of course, could never pay a visit. The masses encountered works of art and design as well as amazing creations of nature during festive victory marches following battles and after the return of traveller-conquerors. These shows included the inhabitants of the conquered land, animals and plants as well as expensive or finely crafted objects as all of these represented rarity and strangeness. Onlookers marvelled at materials, colours and shapes never seen in their own environment. Many of them studied these foreign wonders carefully, so that the impact of these displays could be observed in the arts as well as in science and technology. These exhibitions were all temporary, with no guidance, but their effect heralded those of the meticulously arranged museum exhibitions: they created enjoyment, suggested values, enhanced knowledge and promoted patriotic feelings of pride.

The foundations of the science of collecting were laid by Ptolemy I., whose *Museion* (367-283 BC), as well as the *Shrine of Athene at Pergamon* (3rd century BC) are considered the first systematically developed collections recorded in history. In both spaces, scholars and their disciples, political leaders and men of distinction met and discussed old and contemporary sculptures, paintings and wonders of nature: specimen of zoology and botany. In the vaults of the festive edifices celebrating military victory, or the administrative buildings of the Roman Empire, trophies (flags and jewellery of the defeated enemy) and works of portrait art (busts of famous people and their memorabilia) were carefully arranged. Rich citizens displayed, in the northern part of their villas, protected from household odours and sun, paintings and sculpture by contemporary masters. These home galleries were designed in the same style as other parts of the building – museum style was yet to come. In classical antiquity, collecting was the priority of the richest, exhibition was casual, and the works privately owned.

The model for the first museums, erected in the 19th century, was the temple – the Roman shrine or the Neoclassical church. The entrance had to be elevated, the facade emphasized by a tympanum supported by pillars, and the hall of reception breathtakingly high and spacious.

3.5. picture: Sir Richard Allison: Science Museum, London. 1928 (Photo: Andrea Kárpáti, 2008)

3.6. picture: A typical early 20th century museum interior: National Museum, Brussels, Belgium. (Photo: Andrea Kárpáti)

Another ancestor of the museum as a collecting, researching and exhibiting institution is the Chamber of Curiosities (*Wunderkammer, Kunstkammer)*. Both religious and secular leaders installed it in their homes. Some of these curiosity collections were housed in specially crafted chests of drawers, while others occupied a whole room or large hall. Side by side, hung from the ceiling and crammed on shelves, these curiosity cabinets and spaces showcased beautiful and/or interesting visual attractions. A huge snail shell was equally treasured in its original form or as the body of a silver chalice, because it was the perfect spiral shape that caught the attention of the ardent collector. Skill and talent were exhibited side by side. In the chambers of François I., King of France, (1494–1547), you could see sketches by Leonardo da Vinci along with intricate mechanical puzzles and delicate ivory carvings. Frederick Augustus I or Augustus II the Strong, Elector of Saxony (1670–1733) commissioned the building of an iron-supported, thick-walled wing in his palace to safeguard his precious collection from the cannonballs of the enemy.

3.7. picture: Arts and crafts collections of Augustus the Strong in Dresden. (Photo: Andrea Kárpáti)

In this collection, on show till the present day, raw mineral rocks, sculptures carved from them or jewellery made of polished gems were arranged side-by-side. The message of this collection: Nature is an equally amazing creator as the artist or craftsman. The exhibition does not emphasize a theme or an artist: form is more exciting than content, and the finely crafted object is as good as a beautiful shape found in nature. Visitors were aghast with enjoyment and fear, because, among the masterpieces, you could always expect a two-headed animal or a foetus in formaldehyde.
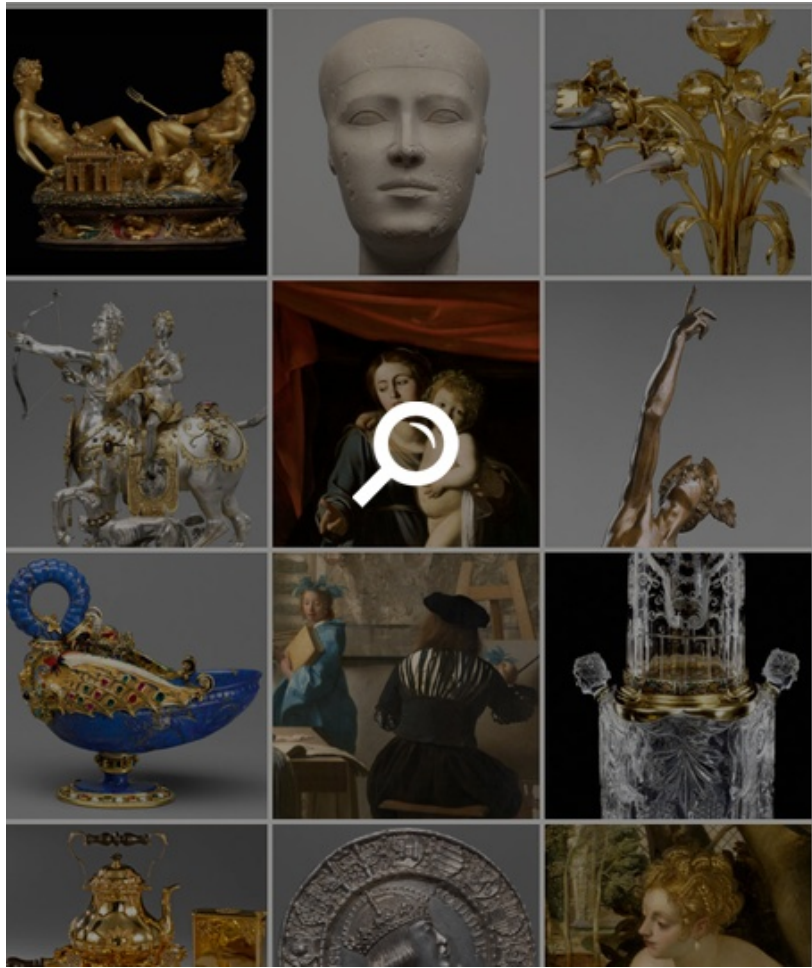
3.8. picture: Opening page of the blog of Wiener Schatzkammer (Treasury in Vienna).

3.9. picture: Contemporary „Wunderkammer": the small objects can be used for different purposes. Image on the home page of The Skullmaster shop.

In the second part of the 18th and the first part of the 19th century, more and more collections opened up for visitors. The concept of "open to the public" was interrelated with "national public". In the 19th century, when the formation of nation-states was generally considered appropriate and desirable, the demonstration of the nation as a cultural unity became very important. The first public collection type was the "*Museum of the Nation*" (*Landesmuseum*, cf. Pearce, 1999). The first institution bearing the traces of the contemporary museum was financed from private donations and state purchases at the same time. Its foundation followed a decision by Parliament – the institution was established in 1753 and signalled its central concept, patriotism, through its name: the British Museum.

3.10. picture: Sir Robert Smirke: The British Museum, London, 1825-50.

The main function of the building is shown by its architectural elements. The visitor, leaving everyday worries behind, climbs a long staircase and accesses the collections through a large, pillared antechamber which leads into the reception area, as if entering a temple. The museum housed both scientific and art objects and was clearly meant to promote research and, through showcasing the ideas of erudite minds, inspire the assembling of more knowledge. In Hungary, economic prosperity in the second half of the 19th century, resulted in the enlargement and strengthening of the bourgeois class. Circles of self-study were formed that articulated a need for better general education. The first public museums were established by these cultural initiatives of citizens. Several museums were opened in the Hungarian provinces during the time of the Austro-Hungarian Monarchy Dual Monarchy (1867–1914).

If we enter a typical museum established at the end of the 19th century and left intact for decades, we realise that they were research institutions with some large exhibition rooms. These showcased as many pieces of the collection as possible in long rows of glass display cabinets. Visitors were largely ignored. Little attention was paid to their worldly needs: there were few toilets, no restaurants or even buffets, and shops were mostly bookshops where periodicals in Latin and thick, dusty research publications waited for the learned customer. The message of the building was: "We safeguard and evaluate – come, if you wish, and admire the objects without disturbing our work."

Exhibition areas did not contain information for the layperson to comprehend. Text attached to objects contained Latin words and inventory numbers. Museum guards were there to prevent visitors from damaging the objects. Catalogues were meant for experts in the field; the illustrated museum leaflet is the invention of the mid-20th century, the first one appeared about a hundred years after the first visitor entered the institution in awe.

3.11. picture: Traditional museum installation from the Louvre, Paris. 2007. (Photo: Andrea Kárpáti)

Changes in the architectural style of museums

3.12. picture: Interior of a modern museum of natural science. (Photo: Andrea Kárpáti)

As we have indicated at the beginning of this chapter, by the end of the 20th century, the style of the museum building had changed drastically and become a work of contemporary art. The new building type of the 20th century is the *architectural sculpture,* in which sculptural form dominates over architectural efficiency. When form supersedes function, the building, amazing as it is, makes it difficult for the staff to organise exhibitions and visitors to find their way around. Most museum edifices, however, are extremely user-friendly: they intend to serve, attract and enchant the visitor and, most importantly, make him or her return with friends and family.

Today museums belong to visitors. If they are hungry, stylish restaurants cater for their needs with a sophisticated menu often related to the exhibitions. If they are tired of observing the work, they can relax in shady cafés and, even there, they can keep on enjoying the company of works of art, as many of the eating and drinking facilities are located near (or even inside) exhibition areas. If looking for presents, visitors can browse among a vast selection of goodies decorated with motifs of the works on show. Bookshops offer a variety of popular publications, as well as volumes of research studies. Museums are multidisciplinary: films are screened, plays are staged and irregular guided tours are organised, led by famous chefs or travellers.

3.13. picture: Restaurant, San Francisco Museum of Modern Art. 2013. (Photo: Andrea Kárpáti)

Exhibition spaces are larger and appropriately lit. Most of them are equipped with information consoles that talk to the average visitor in bold, large typesetting or invite the visitors to use an interactive multimedia database. Even guided tours have changed tremendously. The old-fashioned, lengthy monologue in front of a masterpiece, followed by a fast stroll to the next one is still there, but we can more and more often enjoy interactive ways of explanation that may end in creative work in the educational studio of the museum. All these activities are possible because the museum building has been altered to provide more educational visitor service spaces. It now includes lecture rooms, workshop areas, social gathering sites and recreational facilities. The contemporary museum has become a place of encounter with works and experiences they represent, but is still an important venue for scientific research. The difference between the old and the new concept of museum design is, that the two activities are harmonised and neither dominates the other.

3.14. picture: Interior of a modern museum of natural science. (Photo: Andrea Kárpáti)

With the changes in functions, the design of museum interiors is also different. In a classical environment, walls are made of solid stone and the ceiling is high above the rectangular-shaped, spacious halls. They can be divided but their basic architectural features cannot be altered. Contemporary exhibition spaces, on the other hand, are completely flexible. Their width, height, size and shape, as well as lighting, can easily be changed in accordance with the requirements of temporary exhibitions or events. Curators and exhibition designers involve museum education specialists in the development of maps (*visitor routes*) that guide young and old, eager and leisurely visitors through the exhibition. There is one architectural feature, however, that has remained constant through the ages: the huge reception area that channels you from the hustle and bustle of everyday life into the silent and impressive world of art and science.

3.15. picture: Heureka Science Center, Helsinki: Reception area and entrance to Café Einstein. (Photo: Andrea Kárpáti)

In comparison with visitor areas of early 20th-century museum buildings, the space visitors can now occupy has more than doubled. Almost half the floor space of Centre Pompidou in Paris (completed in 1977), Museum Ludwig in Cologne (1986) or the Tate Modern in London (2000) is dedicated to *visitor management*. (A century before, a similar space was hardly more than 20% of the interior). Exhibition designers of Tate Modern have made good use of the huge walls of the entrance hall and corridors: visitors ascend to an exhibition area watching the flow of names of artists and central concepts of styles they are soon going to encounter. In Lisbon, at the Museum of Modern Art, visitor areas are accentuated with huge sculptures and installations that would have a different effect if installed with several other works in a smaller space.

3.16. picture: Corridor, Modern Art Museum, Lisbon. 2009. (Photo: Andrea Kárpáti)

In a modern museum, *interpretation* (guidance of adult visitors) and *museum learning* (focused mainly on young audience) is equal to producing new scientific results. . Sometimes even the name suggests this double mission, as with the Szórakaténusz Toy Museum and Workshop in Kecskemét, Hungary, which was created by the "Nomadic Generation" of Hungarian intellectuals who considered folk art and culture an effective medium for safeguarding national values in the age of communism. At this institution, folk music, crafts and plays are researched and taught at the same time.

3.17. picture: Playful family event at the Szórakaténusz Toy Workshop and Museum, Kecskemét, Hungary. (Photo from the Facebook page of the museum.

There are buildings that recall a wide spectrum of memories about their history. Art exhibitions can reflect only a few of these associations, but visitors will nevertheless bring theirs along when entering historic sites. When a new building is erected within an architectural ensemble, the designer may opt for a similar style or maybe for entirely different shapes and materials. I. M. Pei, who designed the controversial Glass Pyramid, the reception area in one of the Baroque courtyards of the Louvre, the historic palace of the French kings, was 20 years old when he left his

homeland, China, to study architecture at Harvard University. Brought up in a strong stylistic tradition in Sichuan, he was ready to break with it and experiment with modern solutions. Most of his works employ glass – here he creates an architectural whole through reflections of neighbouring buildings on the glass panels of the pyramid.

3.18. picture: A museum building with historical association: the Louvre in Paris. The palace in the background was designed by Pierre Percier and Pierre François Leonard Fontaine and completed in 1805, with the incorporation of older architectural monuments. In the foreground: the glass pyramid by I. M. Pei, completed in 1989. (Photo: Andrea Kárpáti).

Pei was in his eighties when he was called back to his native town, Sichuan, to design a museum of classic Chinese art. The building complex, inaugurated in 2006, is situated in one of the few remaining old Chinese townships that survived the modernisation campaigns of the second half of the last century. He designed a building façade that smoothly blends into this environment as it utilises architectural elements of ancient Chinese homes.

3.19. picture: I. M. Pei: Exhibition space at the National Museum, Sichuan. 2012. (Photo: Andrea Kárpáti)

The spacious galleries that are lit mostly by natural light open to small rock gardens where visitors can enjoy beautifully shaped stones, pine trees and peonies, themes of many Chinese ink paintings. A creek runs through the alley between the stainless steel constructions covered by white wall panels. Bamboo arrangements and small wooden bridges decorate pathways that lead from one pavilion to the other, resembling the floor plan of the traditional Chinese living arrangements, the *hutongs*. Next to the contemporary buildings, integrated in the garden of the museum, a functioning Buddhist shrine, dating back many centuries, completes the blending of past and present. The message of the building and its exhibitions is: treasures of the past are now considered an inseparable component of the present of the economically thriving "New China".

3.20. picture: Contemporary museum building inspired by classic styles. I. M. Pei: National Museum, Sichuan. 2006. (Photo: Andrea Kárpáti)

3.21. picture: Inner garden with a rock shaped by specially sprinkled water – an object of "artificial nature" that is considered a work of art and highly valued. I. M. Pei: National Museum, Sichuan. 2006. (Photo: Andrea Kárpáti)

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3.22. picture: Building complex with lake. I. M. Pei: National Museum, Sichuan. 2006. (Photo: Andrea Kárpáti)

An interesting example of safeguarding and modernising the past at the same time is the Museum Fridericianum in Kassel, one of the first collections developed by the noble gentry and opened to the public in 1776. The palace was demolished during the Second World War but was rebuilt as an exact replica and became the main exhibition site of a major international contemporary art show, the *Documenta*, organised every four years. The impressive Baroque building is not only to the location of many modern art exhibitions, but often the background for political demonstrations, too. In 2012, when the exhibition was simultaneously organised at several overseas venues, including Near Asia, protesters called attention to the problematic issues of choosing countries suffering from dictatorial rule as exhibition venues and spending huge amounts of money on shipping exhibits abroad at a time of financial crisis. This example shows the validity of the statement on our title page picture: yes, museums are sometimes political, inspiring social action through art.

3.23. picture: Dokumenta 2012 – protesters' tents and installations. Kasssel, Germany. (Photo: Andrea Kárpáti)

3.24. picture: Dokumenta 2012 – the main exhibition building, Fridericianumwith protesters' tents,Kasssel, Germany. (Photo: Andrea Kárpáti)

When a museum building is rebuilt, its mission statement (manifest also in the architectural surroundings) also has to be reconsidered. Recently, when the new Acropolis Museum was opened in Athens it became an initiation space into the glorious history of a nation now in a deep moral and financial crisis. The new entrance area opens to reveal the archaeological site underneath the museum. Native visitors are literally walking on top of their impressive past. On the ground floor copies of the *Elgin,* or *Parthenon Marbles*[3] and their remaining sister pieces are exhibited in a form that resembles their original position. A live broadcast from the museum workshops and documentary films about their conservation showing how much care is given to these national treasures emphasizes their importance. The fine arts and literature of ancient Greece are not only part, but the main fuel of national pride for Greek people. On holidays, when families have time for a longer visit, they queue in front of the building, wishing to show their children their land's substantial contributions to European culture. Nowadays (2013, spring), much criticised by the EU for overspending and bad management, this country turns to museums to reunite with a past that may give inspiration and strength to solve contemporary problems.

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[3]Some marble sculptures from the decoration of the Parthenon and reliefs were bought by Lord Elgin from the Turkish occupiers of Greece in 1801-1812 and shipped to London. The British government purchased them in 1816 to be exhibited in the British Museum, where they are on show till the present day. The Greek government, with vehement public support, keeps demanding the return of the treasures.

3.25. picture: Acropolis Museum, exterior and environment. Athens, 2011. (Photo: Andrea Kárpáti)

3.26. picture: Acropolis Museum, interior with view on the Acropolis. Athens, 2011. (Photo: Andrea Kárpáti)

3.27. picture: Acropolis Museum, interior with in situ presentation of monuments as part of the excavation site underneath the museum. 2011. (Photo: Andrea Kárpáti)

3.28. picture: Acropolis Museum, interior with an exhibition of the Parthenon frieze installed to resemble its original arrangement. (Photo: Andrea Kárpáti)

Museum in venues built for another purpose

Museum criticism, a new critical genre that evaluates the mission statement of a museum and all levels and forms of its realisation: exhibitions, research and educational activities, infrastructure, mood and style as a whole, pays particular attention to the building as a materialisation and scaffolding of all these endeavours. Critics do not discuss practical details of the infrastructure – their ambition is to see the connections between content and form, the exhibitions and the "*genius loci*". If the building does not support and serve the aims of the museum, if there is no relation between the walls and things hung on them, if the building lives a life of its own, the shows are likely to suffer in the *Bed of Prokrustes*.

The *Budapest Museum Quarter* is a cultural project that will develop one of the most substantial new museum sites in Europe, and certainly the largest in Hungary. The only similar effort, around the time of Hungary's Millennium Celebrations of 1896, was the relocation of the Museum of Fine Arts and the erection of the Art Hall, facing each other on two sides of Heroes' Square, crowning the most elegant boulevard of the expanding capital city of a prosperous country. The new quarter, planned to be completed in 2018, will occupy the area behind the Art Hall where once revolutionaries of 1956 pulled down the giant statue of Stalin.

The international tender for architectural plans will be invited in the second half of 2013 by a team of experts headed by László Baán, director of the Hungarian Museum of Fine Arts. The space is impressive, the location beneficial: the most important public collection of art in the country, the Museum of Fine Arts is in the neighbourhood, the Art Hall, the largest national temporary exhibition facility for modern art will be next door, and the museums that will be relocated are now housed in buildings erected for a different purpose or have no permanent exhibition space at all.
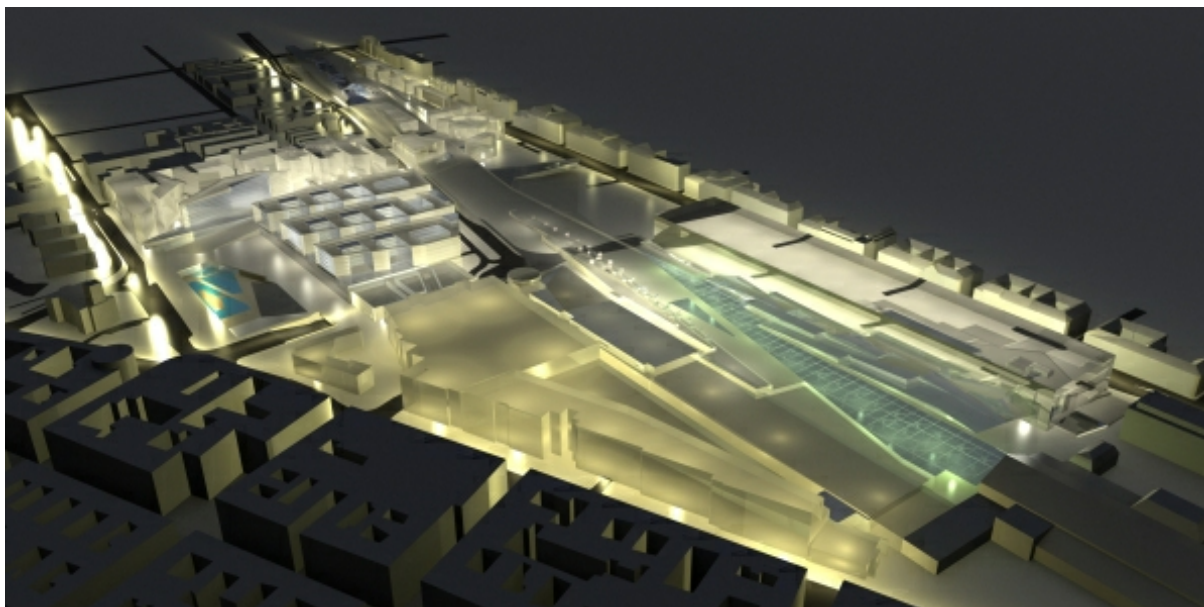
3.29. picture: Unofficial idea plan for the new Budapest Museum Quarter from an article in Pester Lloyd, 12. February, 2013, about the project

One of the institutions to be relocated, the Hungarian Museum of Ethnography, which is currently housed in the former Supreme Court building, exhibits exciting collections of visual ethnography, as well as important relics of the past of Hungarian village life. Another, the National Gallery, occupies two wings in the former Royal Palace. The collections of photography and architecture (safeguarding designs and prints of world-famous Hungarian creators like Frank Capa, Marcel Breuer, Laszlo Moholy-Nagy and George Kepes) have never had a permanent exhibition facility. The new Museum Quarter will include the 20th and 21st-century works of the merged collection of the Museum of Fine Arts and the Hungarian National Gallery. The Museum of Ethnography, the Hungarian Museum of Photography, the Ludwig Museum and the House of Hungarian Music will all be included in the new building complex.

A typical example of a museum housed in a building designed for a different purpose would be an exhibition at a neglected industrial site. If a foundry is closed down, a mill stops functioning, a textile factory is relocated to a country with cheaper labour force, and the building left behind cannot be utilised as an office block or hotel, cultural functions are considered and often it is the establishment of a museum of technology that seems to be most appropriate to exhibit old tools and utensils on the site where they were used for many years. *Industrial monuments* are usually interesting even without much adaptation, and if exhibition developers manage to adapt the venue to its new purpose, and keep its original atmosphere at the same time, success is guaranteed and so is authenticity.

Guides in such a museum bring the building to life through narratives about work performed and lives lived within the walls. Standing in a workshop where tools and machines are exhibited where they were used, makes learning about the history of technology more natural. Many of the objects are well-known for parents and grandparents, though totally new to generations under thirty. Older family members will be valuable resources during a visit into what used to be their daily life some decades ago. Industrial sites as museums teach about cultural history through the spaces of their building as well as their exhibitions.

3.30. picture: The Georgikon Museum, Keszthely, housed in the building of the one-time agricultural college.2010. (Photo: Andrea Kárpáti)

3.2. Classic, outdated and modern exhibition venues and installations

Although museum buildings have a huge effect on the exhibitions they house, the latter can "play against" the environment and still be successful. An example: the architectural monument that now houses contemporary art exhibitions, like the Art Hall in Budapest. However, it is not always easy to counteract the effects of the environment. Therefore, many exhibitions that are installed within the gloomy, grey walls of a Classicist museum building are similarly pompous and cold in mood. An exhibition model that dates from the beginnings of public exhibitions, the victory celebration shows of ancient Rome, involved the lining up of hundreds of trophies acquired from the enemy in battle in huge, interconnected spaces and was quite enjoyable when the "museum" was a hall of columns without walls, from where viewers could always step out to the open air. Visitors plodding along an endless series of rooms in a classic museum building often lose their sense of orientation and their temper at the same time. Although most of the works on show are indisputable masterpieces, their quantity can be overwhelming – especially if they are placed in two or three rows on top of each other on walls or in glass cabinets. Here, *improvement of the visitor experience* (the favourite slogan of our time) means selection of a few major works and their arrangement according to epoch, master, theme or technique.

3.31. picture: Impressive arrangement of paintings in a traditional museum space. 2010. Louvre, Paris. (Photo: Andrea Kárpáti)

The other exhibition archetype, the "*Wunderkammer*" resulted in museums that exhibited large collections of entirely different nature. Special shelves had been used to store objects of different nature already in chambers of curiosities. At that time, museum evolution meant the *separation of different collections* and their relocation in museums of the arts and those of natural science and technology. Later, *explanatory objects* appeared among the exhibition pieces: a picture of the bird whose egg was on show, or a catching instrument that helped in acquiring the prey. Finally, *grouping according to visual and / or scientific criteria* was employed to reinforce the characteristics of different animal species or works of art with similar styles or genres.

The medieval microcosm based on formal analogies was reflected in drawers containing objects lined up according to shape and size. Showcases included descriptions understandable for non-experts, and magnifying glasses were attached to them in order to enhance the visual experience. Prints were exhibited on tall tables that allowed the viewer to leaf through them at leisure. Thus the first *installation devices* appeared. The first *thematic shows* that offered a scholarly selection and thus create order in diversity already paved the way for modern museology.

3.32. picture: Contemporary exhibition in a traditional setting. Design Museum, Paris, 2010.

In the first half of the 16th century Giovio, a medical doctor, humanist and writer, opened his collection entitled "The Temple of Fame" to the public. It featured about 150 portrait sculptures of monarchs, war heroes, clergymen, artists and scientists, with inscriptions explaining their great deeds. Men of the same profession were shown as a group, in order to make their achievements comparable. This exhibition of cultural history was followed by many similar initiatives. Samuel Quiccheberg, a Dutch colleague of Giovio, described the ideal art collection in Munich in 1565. He defined the following types of museums:

– *Historical*: the gallery of ancestors with genealogical tables, portraits and engravings showing important geographical areas and buildings;

– *Treasury:* works of fine arts, coins, filigree works made of precious metals*,* archaeological find, exotic utensils, etc.;

– *Objects of nature:* human skulls and bones, stuffed animals, botanical and zoological collections, minerals;

– *Masterpieces of technology:* instruments of mechanics, mathematics, astronomy and music, machines, medical and handicraft tools, devices for hunting and fishing, etc.;

– *Picture gallery:* paintings, drawings, engravings, etchings and tools used to make them.

Quiccheberg described collections that represented all spheres of human activities known in his age as the model of the *generalist museum.* He emphasized that no collection can be valuable if incomplete – all areas of human endeavour have to be presented. In order to acquire such a vast cultural literacy one had to be wealthy to have time to spend on learning, so his ideal museum was accessible only for the erudite few. Nevertheless, this collection

model, based on the ideal of the "*uomo universale*", the universal intellectual of the Renaissance, was to influence museum development for many decades to come. Most large national museums established in the 19th century followed this ideal and exhibited side by side, often in one and the same room, results of scientific discovery and artistic creativity.

Special collections were mostly established in the first half of the 20th century, although some important ones from the 18th and 19th centuries have also come down to us. Oriented towards a selected group of objects, the buildings of these museums were mostly custom-designed to offer the best viewing experience and storage facilities. Fortunately, many of them can be visited today and in some even the original installation is visible. Ferdinand, Crown Prince of Tyrol (1520–1595), united the treasures of the Spanish, Austrian and French courts to form the *Schatzkammer*, Treasure Chamber, in 1563. After several decades of closure, this magnificent collection opened its gates again in the spring of 2013. In the dark halls, lit by a few spotlights only, treasures are installed on velvet-covered shelves specially designed to hold certain works of art. – The Porcelain Collection of Augustus the Strong in Dresden is still in the same building that was erected to show the vases and sculpture. Placed on glass shelves with mirroring background, in corridors with large windows overlooking the river and an interior court with fountains, the vessels acquire a special, airy presence and seem fragile and delicate.

3.33. picture: The Zwinger in Dresden, Germany.

The Zwinger in Dresden is one of the first buildings designed to house different collections in wings dedicated to one genre or period only. The Duke was asked by his architect to select and exhibit only masterpieces and show the most valuable works in the central halls of the wings, accentuated with a cupola. A graphic arts collection and a library completed the museum. Here the works were organised according to date of completion and a catalogue helped the expert viewer to retrieve the works. Time sequence was also a guiding principle in the design collection. The *galleria progressiva,* the historical sequence of museum galleries, became the leading exhibition type for art and design for centuries to come. Visitors passing through the halls experienced progression, refinement and increasing sophistication, and readily accepted the evolutionary theory of art history. *Museum arrangements suggesting scientific ideas* educated the audience more effectively than any scholarly presentation or treatise could have done. New models of presentation offering parallel developmental paths, contrasting styles and trends or horizontally organised works of art appeared only at the beginning of the 20th century, with new paradigms about development and change in the visual arts.

3.34. picture: Continuous flow of exhibition spaces. Musée D' Orsay, Paris. 2007. (Photo: Andrea Kárpáti)

In the Age of Enlightenment, the *themed museum model* took off in France, where the collections of the kings, housed in their palace, the Louvre, were nationalised in 1792. This museum presented fine arts and crafts only. Paintings and drawings, sculpture and works of applied arts were arranged in a historical sequence and grouped by genre. In England, the British Museum preserved the classic, show-it-all model and housed a collection of natural history under its roof until the foundation of the Natural History Museum in London in 1881.

In the 19th century museums of arts and science separated. Some arts collections specialised in styles and genres, others focused on history and exhibited memorabilia of important events, as well as works of art. The Victoria and Albert Museum in London integrated these two trends and exhibited fine and applied arts in settings that showed their historical relevance and functions in the life of the people who created them. Cultural and social anthropology as a branch of study appeared much later, in the second half of the 20th century. In the huge halls of the Victoria and Albert Museum, however, a modern approach to the interpretation of the arts and crafts in their social context was the guiding principle. The integration of art and culture in museums had begun.

The essence of an exhibition is showing originals. However, there is an important educational objective – the representation of art history as a developmental sequence and also the lack of important works in many smaller museums created the need for a special type of study collection, the *glyptotek*. This exhibition facility displays plaster copies of world-famous sculptures and reliefs. First, only Greek and Roman works were cast life size, and then sculptures of Renaissance and Baroque artists of fame were added. The message of these collections of copies was a tribute to the excellence of the art and culture of the most glorious periods in art history: ancient Greece and Rome and the Italian Renaissance.

3.35. picture: Ny Carlsberg Glyptotek, Copenhagen. 2011. (Photo: Andrea Kárpáti)

These collections also served as a reminder for those young gentlemen who managed to complete the *Small Circle*, a study tour to Italy, Germany and France, or the *Big Circle*, which included Spain, Portugal and/or Great Britain, too. Glyptoteks also strengthened European identity, since they reinforced the belief of European superiority in world culture.

History museums not only show but also interpret history. Therefore, exhibitions in national museums in different countries may offer an entirely different view about the same events. Even archaeological collections are not merely keepers of ruins and broken objects of bygone ages. They articulate views about the origin of a nation, and ultimately, its right to the land where it lives.

3.36. picture: History reconstructed: Robert Koch exhibition at the National Museum in Oslo, including an interpretation of his contributions to medicine. 2007. (Photo: Andrea Kárpáti)

The *military history collection,* in which the theme of the exhibition is not only ancient armour but also the interpretations of military actions of the past, is a special type of the museum of history. Some of the events interpreted here involve sensitive political issues, so the mission of these museums generally includes data-driven education in the history of the nation. Most military collections are appropriately situated in fortresses or castles that have a narrative of their own to tell. The venues recall memories that also become part of the exhibition and contribute to its reception. For example, the Hungarian Museum of Military History and the Heergeschichtliches Museum in Vienna both present events of the 1848-49 Hungarian revolution and war of independence against the Austrian Habsburgs. Needless to say, their interpretations are different, although both institutions intend to offer an impartial, unbiased recollection of events.

Museums of folk art also may involve political overtones. In the Szentendre Open-Air Museum in Hungary, for example, we may enter the home of a Hungarian family living in a territory that belonged to Hungary first, then to Czechoslovakia, then again to Hungary. On the wall, video documentaries narrate the history of the area, including the evacuation of minorities by both powers. Watching the film while sitting in the kitchen that seems to have just been abandoned by a family forced to evacuate and emigrate, leaving behind possessions accumulated during a lifetime, gives simple household utensils a special, metaphoric significance.

The mission of *folk art museums* is to give an overview of the material and spiritual culture of all the nationalities living in a country. It is important to interpret interrelations and cultural connections, and to emphasize kinship through cultural events. In the Nordiska Museet in Stockholm, for example, we can witness strong ties that unite Nordic countries through their common heritage. Collections of historical anthropology are also present in these collections, and their interpretation gives rise to many debates about political correctness. In the Musée de l'Homme in Paris and the Museum of Ethnography in Budapest, museologists successfully manage to avoid stereotypes of the "*noble savage*", the patronizing attitude of Western civilisation towards nomadic ways of life with equally valuable cultural traditions.

Many stereotypes coming from popular culture (for example, films and books about the native American Indians) have to be reconceptualised by these exhibitions. Cultural anthropology research helps explain and present lifestyles

of minorities in a more sophisticated, multidisciplinary manner, in order to show valuable works of art and design, science and technology, literature and music that give evidence of the contribution of these cultures to civilisation.

3.37. picture: Storage room as showcase at the Szentendre Open Air Museum, Hungary. (Photo: Andrea Kárpáti)

3.38. picture: Presentation of farmers' life at the Szentendre Open Air Museum, Hungary. (Photo: Andrea Kárpáti)

Museums of natural history and technology belong to the oldest museum genres. It is this type of collection that shows best the way museums (and their buildings) have changed from storage facilities to educational institutions. Classic collections of natural history provide an overview of different branches of science through large showcases tightly packed with minerals, plants or animals, machines, utensils or documentations of discoveries. Parts of the collections are explained through long texts printed in small script on panels at the entrance of halls. For the expert, this storage room structure is a joy to behold, while for the average visitor it is an extremely tiring experience. Natural history museums today show their changing attitudes towards visitor management through developing less crowded installations with more explanations. Lifelike dioramas, hands-on activities, on-site laboratories, interactive information panels with lots of visual materials and skilled explainers help viewers to make meaning of the exhibits.

3.39. picture: Traditional environment of a museum of natural science (Photo: Andrea Kárpáti)

In the second part of the 20th century, two new type of presentation of natural history themes appeared: the *science museum,* dedicated to the history of life-changing inventions, and the *science centre* or *café* where visitors can experience what it means and how it feels to be an experimenting researcher. Through workshops, animated visits and special events focusing on one area of science, these institutions help narrow the gap between the liberal arts and natural science, and motivate young and old to learn about or even explore the laws of nature.

Science centres are also often housed in unusual buildings.[4] The *Palace of Miracles* in Budapest was originally housed in an old factory building; the Exploratorium in San Francisco has just moved into a dock by the dam of San Francisco, the Ontario Science Centre in Toronto[5] is situated in a futuristic building-sculpture. According to Michael Fehr (2012), the science centre is the ideal museum space. Here visitors find themselves in a creative environment, among a wide variety of things they cannot readily understand but are also allowed to freely explore. In such a situation, visitors engage in a work process similar to those of scientists: they identify a problem, build a hypothesis, search for existing information, construct and undertake experiments and (hopefully) arrive at a solution. Then they may start again, with a different set of intriguing objects and tools.

[4]Wikipedia lists some of the most important science centres in the world.
[5]Ontario Science Centre, Toronto, Canada: home page for teachers on curriculum integration.

3.40. picture: Garden of the Heureka Science Center in Helsinki. 2010. (Photo: Andrea Kárpáti)

The extension of the educational work of the museum (the *outreach programme)* is perhaps the most important new method of museum education today. Museum educators want to follow visitors beyond the walls of their institution and offer connections between everyday life and the museum experience. School programmes preparing for or following up a museum visit have long been organised. Outreach programmes, however, offer more to more people, including those who do not attend an educational institution or come to visit without being part of a school group. These occasional guests may be turned into regular visitors through a continuous information flow and easy ways of keeping in touch and giving feedback.

One of the contemporary inventions of exhibition design is the network of interactive consoles placed near highlights of the display, offering explanation, additional information or experiments and games related to the objects just seen and read about. These consoles can be accessed through the insertion of a digital entrance ticket that links to a personal storage space created for every registered visitor on the museum server. Active audience members can access information about their performance at the interactive consoles and download images to email home as souvenirs. These digital tickets are symbols of outreach: the museum enters the homes and from home, one-time visitors may become part of the museum community. Hein (2005) describes the types of museums according to their interpretation models:

–   The "*systematic museum*" based on traditional lecture and text, where visitors are ushered through large spaces by knowledgeable guides;

–   Museums based on *discovery learning*, where investigation and invention are key processes of explanation and visitors are active partners in a knowledge-building process;

–   The "*stimulus – response"* museums where experiences are "programmed" and exhibition and explanation spaces are integrated;

–   The *constructivist* museum that offers a holistic, interactive experience. A site that encourages individual knowledge construction as well as group learning, many objects on display may be scrutinised and experimented with.[6]

Three out of these four models are based on *active visitor involvement*. Museum buildings today are designed to support this new concept of exhibiting. Contemporary museums make efforts to get to know their customers in order to provide experiences and information best suited to their needs and in harmony with the mission of the museum.
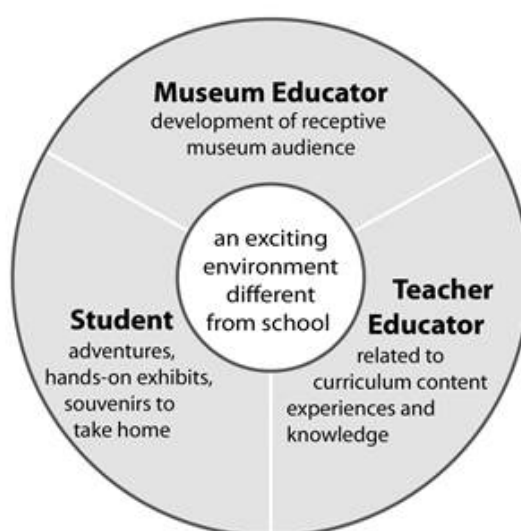
3.1. graph: Expectations of the students , teachers and museum educators about a museum visit. (Kovács and Kárpáti, 2011, p. 273)

3.3. Special exhibition venues

When we hear the word "museum", we think about buildings. However, exhibitions are organised in open spaces that are not normally considered as places to encounter works of art or historic documents. *Street shows* (for example, "Street Views" /*Utcaképek*/ 2012 in Budapest) are community projects that provide information about a locality or exhibit works of art inspired by (or produced by) people in the area. Images we encounter on the street are sometimes strikingly beautiful or thought-provoking – works of art or social statements that evoke emotions and ideas that are normally the products of a museum visit. Social graffiti by Banksy, installations in public spaces by the Hungarian concept artist Pál Berger, and other examples of *street art* inspire curators to organise shows that interpret them. (An example: the Hungarian pavilion at the 10th Biennale of Architecture in Venice. The exhibition showed how Chinese immigrants in Hungary reshape the streets of the capital and thus create a second cultural identity, mixed with local images and values.)

A new research method that also results in exhibitions at unusual locations in *urban archaeology* identifies, documents and presents culturally important images and spaces of a city that may go unnoticed. Such projects are exhibited in the so-called "*ruin pubs*" in Budapest – pubs functioning in forsaken, derelict apartment blocks that may also become part of urban archaeology research.

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[6]This approach is of course unimaginable in an art collection, but a desirable model for science centres.

Nagyvárosi régészet - kiállításajánló

Két művész és egy régész együttműködéséből született az a ma este, a Margitszigeten nyíló művészeti kiállítás, amely kortárs nyilvános tereket vizsgál a régészet szemszögéből.

A nagyrészt fotókból és néhány tárgyból álló gyűjtemény elsősorban olyan, az átlagos szemlélő számára érthetetlenné vált üzenetekkel, jelekkel foglalkozik, amelyek a város élete, tevékenysége során, vagy a természeti folyamatok révén megcsonkultak, kiszakadtak eredeti környezetükből, vagy újabb rétegek rakódtak rájuk.

3.41. picture: The poster comes from a review about an urban archaeology project by Tökmag Gruppo (Tamás Budha and András Tábori) and Miklós Rácz at Holdudvar (Moon Courtyard) Café, a ruin pub in Budapest, 2010.

Mobile exhibition spaces of museums may also be considered special venues, but in fact they are extensions of the museum that produces them. The *Etnomobil 2.0 project* organised by the Hungarian Museum of Ethnography with the participation of seventeen Hungarian institutions is a display inside a trailer. It presents a topic very appropriate for the venue: the interrelations of movement and art, illustrated by contemporary objects and stories. Visitors who board the trailer as it stops in towns and villages in Hungary can enrich the repertoire of stories and others things with their own experiences about moving around, travelling, or any other topic associated with mobility. The *Petőfi Literary Museum* (Hungarian abbreviation: PIM) in Budapest has been offering a variety of mobile exhibitions related to its displays – for example, on the modernisation of the Hungarian language and the centenary of the important literary movement of the beginning of the 20th century linked to the journal *Nyugat* (Occident). These displays were visited by many people whose first encounter with the world of museums occurred when they curiously entered the bus, which had eye-catching posters on its sides.

3.42. picture: Mobile exhibition space of the Petőfi Literary Museum (PIM), Budapest: the exterior of the bus. (Photo: Csaba Gál, Petőfi Literary Museum)

3.43. picture: Mobile exhibition space of the Petőfi Literary Museum (PIM), Budapest: the interior of the bus. The exhibition commemorates the important Hungarian composer of national operas, Ferenc Erkel. (Photo: Csaba Gál, Petőfi Literary Museum)

Unusual exhibition spaces are inviting because they offer an informal, adventurous encounter with culture that is not threatening and does not appear to be boring and elitist – emotions often associated with a museum visit and preventing many potential museum friends from starting the acquaintance. Sometimes these displays just happen to be there where people go for a leisurely stroll – on a lake, for example. The exhibition entitled *Art on the Lake* ("Művészet a tavon" in Hungarian), was conceived and co-curated by Krisztina Jerger and organised twice, in 2010 and 2011, on Lake Vajdahunyad, near the prestigious buildings of the Museum of Fine Arts and Art Hall in

Budapest. For the second occasion, 35,000 square metres of water were used as exhibition space and twenty-five artists from all over Europe participated with installations specially designed or adapted for the venue. From ten in the morning until ten at night, thousands of visitors entered the site and stared at the pieces from a sidewalk or approached them by boat. Other people – many of whom would never even consider entering an exhibition of modern art – observed the peculiar installations from a nearby bridge with great interest. Nature provided an exciting setting. The aesthetic appeal of works was enhanced by changes of light and reflections on the water.

3.44. picture: Art on Lake: works of art with visitors viewing them from a boat. (Photo by János Gyuricza from the Pinterest page of the photographer).

There are shows that can only be seen for one day, or for a few special days of the year. Such is the *"Budapest 100" project* that invites visitors to enter Budapest apartment houses that are at least 100 years old. Art treasures hidden in courtyards and corridors are not normally visible for passers-by, not to speak of trellises and frescoes in flats, attics or cellars. Therefore, the days when these buildings open up their gates and the residents offer an intro-duction to their homes (and often some cultural events and refreshments as well), are much appreciated by the lovers of our capital city. Local guides not only show architectural monuments, they also introduce famous inhab-itants of the past and present whose oeuvre was inspired by the environment.
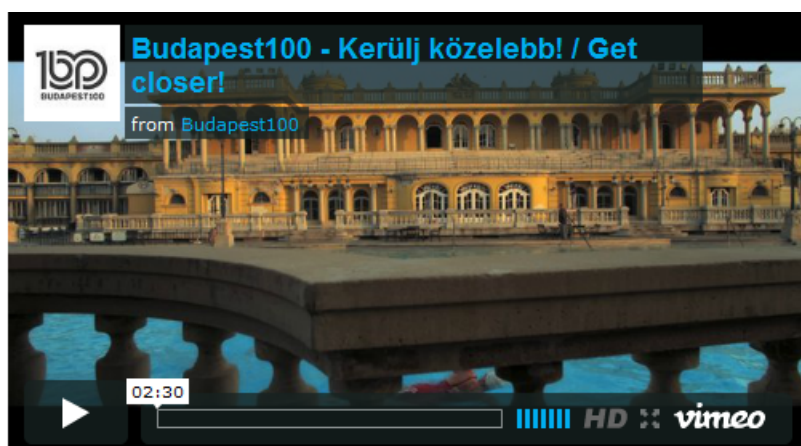
3.45. picture: Budapest100! – Get closer! Title page of a video about the project on Vimeo.

Historical monuments also may be considered exceptional exhibition spaces because they are often reconstructed with added functions to suit modern museum needs. An excellent example: the *Cella Septichora* in Pécs is a Roman *catacomb* (burial complex) from the outside, and from the inside, a spacious visitor centre and exhibition hall. The task of the museum designer was to keep the original appearance intact as much as possible, while also catering for contemporary visitor needs.

3.46. picture: Zoltán Bachmann: Cella Septichora, Interior. (Photo: Imréné Gyimesi, née Eszter Berzsenyi. Source: http://www.panoramio.com/photo/20898197.)
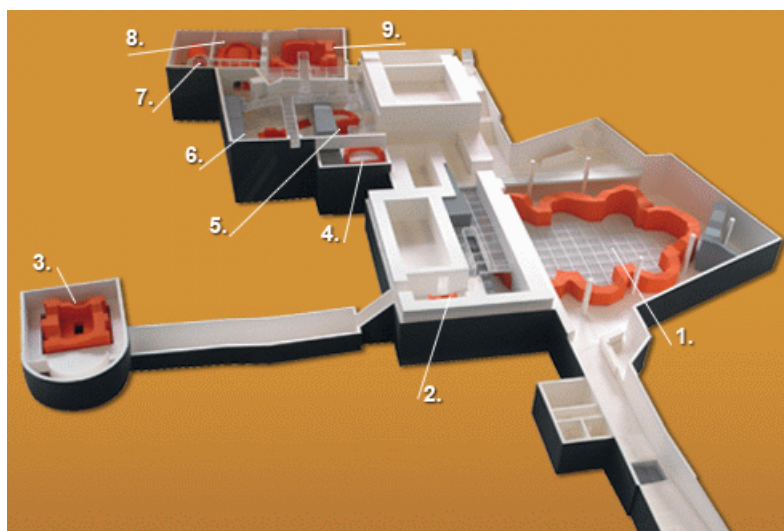
3.47. picture: Zoltán Bachmann: Floor plan of the Cella Septichora, Visitor Centre. Floor plan from the cultural heritage page of the City of Pécs

To summarise this brief overview of the evolution and contemporary forms of the museum building, the conclusion is that the exhibition space has a strong communicative value. Whoever uses it for whatever purpose, the architectural environment has a meaning of its own that must be integrated with the messages of the museum. While solving the tasks below, you may experience what it means to come to terms with the built environment when developing and realising an exhibition project.

Task 1:

Comparison of functions of a classic and modern museum building

Choose a museum that was built at the end of the 19th or the beginning of the 20th century and compare it with a contemporary exhibition site in the same city! (Hungarian examples for comparison: the Déri Museum and MODEM, a modern exhibition hall in Debrecen; the Hungarian National Gallery in Buda Castle and the Ludwig Museum in Budapest; the Ferenc Móra Museum in Szeged and the "Cifra Palota", a new exhibition facility in an Art Nouveau building.)

Using photographs and floor plans found on the internet see how they are situated in their cities. Go and visit to observe where their different exhibition spaces and recreational areas are located. Imagine that you are a museum educator commissioned to design family programmes in the two institutions. Where would you take the visitors? What would you do, and for how long? How would you advertise the programme outside and inside the museum? What would be the differences among the two programmes organised in the old and new exhibition site?

Task 2:

Exhibition design at a special venue

You are a curator who intends to organise a display for a young designer in an unusual place. Walk around your neighbourhood and try to find a suitable location that would be good for exhibiting textile, glass, woodwork, etc. – the genre of choice of your designer. Photograph the venue and describe your installation ideas in a PowerPoint or Prezi presentation and show why you selected the site and how you are going to utilise its features. Write notes describing your ideas under each PowerPoint slide (or in a document, if you are using Prezi) to share with the artist and the sponsors! In your seminar group, present – and, if necessary – defend the feasibility of your project!

Your work will be more authentic (and more enjoyable for your audience) if you have a real, practising designer in mind. Find one at a museum or gallery of applied arts and before you start the search for a suitable environment look for his or her works on the internet and in libraries.

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Chapter 4. From the mission statement to the message and scientific content of exhibitions

4.1. Mission statement

(Tamás Vásárhelyi)

After the political changes in the 1990s, for-profit companies started to use a phrase that was difficult to interpret in the non-profit sector: *mission statement.* Soon, public organisations adopted the term and presented their social commitment on their home page. However there is still some reluctance in museum circles about formulating clearly what their objectives are and how they intend to contribute to society. Yet more and more institutions understand that such a statement may strengthen the sense of identity and dedication of museum personnel and thus increase their performance as well. When museums formulate their mission, it has profound effects on their communication strategies. Therefore, we have to discuss this issue and show how this core document translates into action on different levels of the institution.

4.1. picture: Mission statement of an American museum published on its home page.

If an institution has a powerful and well articulated mission statement, staff members are more likely to follow its intentions and formulate their own sets of objectives accordingly. However, if the mission is not clear for all, personal interpretations may differ and result in confusion or confrontation. A Dutch museologist once characterised the main function of the mission statement with a metaphor: if it is appropriate, everyone is looking in the same direction! Thus, a mission statement can only be considered successful if it is shared by at least the key personnel of the museum.

Museums articulate their objectives in different forms. Some examples:

– *Mission*: the *raison d'être* of the institution, the justification of its existence;

– *Vision*: public appeal, social use the museum intends to achieve;

– *Task, mandate*: this outlines the target territory of the museum (according to geographical area, branches of science, chronological age of exhibited pieces, etc.) and the audience it hopes to reach (according to age groups, professional groups, etc.).

These three areas are covered in different core documents of the museum. The task or mandate is usually postulated in the contract authored by the sponsoring organisation at the first stage of the conception of the new institution, while the mission and vision are described in publications of the museum itself. The latter also include clearly specified tasks and responsibilities of departments or persons.

The organisation of an exhibition may serve several purposes. The simplest one is to keep the staff busy and develop their skills. An exhibition may also be considered as an investment that is profitable because of the sales at the

ticket booth, the museum shop and restaurant, or – if it is a commercial show – an increase in purchases of the objects exhibited. A show may increase visitor numbers and enlarge the scope of potential visitors reached through messages on communication platforms that they may find intriguing enough to come and see the collections. In many instances, museums have new content to share: a research result that may change your life (or your way of thinking at least); important works of art; or new interpretations of those exhibited before. Whatever the purpose of the display, communication about it should reflect the mission and vision of the institution.

4.2. picture: Countdown 2010, a campaign to celebrate the Year of Biodiversity. The natural history museum of the Republic of South Africa, a country whose economy relies on safari tourism, called the attention of visitors to the importance of biodiversity already in 2008. (Photo: Tamás Vásárhelyi)

Why is it important for a museum to go beyond its immediate tasks and care for a lasting impact on values and attitudes of its visitors? Apart from knowledge transmitted through the observation of objects and emotional attachment to the institution as a place of high culture, museums may have other purposes, too: teaching skills that may be relevant for work, refinement of taste, inspiration for innovation and research, to name only a few. Museums have a beneficial effect that goes well beyond their mission: they urge us to revere and preserve our national heritage.

4.3. picture: Translation of the text: "Here we have understood things we have been wondering about since childhood. Thanks to the professional guidance, we experienced and grew a lot." The Museum of Postal Services had a great effect on this visitor! (Photo: Tamás Vásárhelyi)

At this point, we have to return to the concept of the mission statement. This set of objectives may have a profound effect on what, how, and why we exhibit. Let us take the example of a mixed profile museum in a small town that may state the following mission:

It is our main objective to collect, conserve, study and exhibit archaeological, historical, ethnographic and scientific heritage and make it accessible first and foremost for the citizens of this county. We also want to share our treasures with tourists and visiting school groups or individuals so that they could experience what this part of the country has to offer.

If this museum intends to function according to its mission statement, its activities should have the following characteristics:

1.	Exhibitions focus on the neighbouring area;

2.	Exhibitions are developed in four branches of science;

3.	Target groups are not only local citizens, but also incoming tourists and students;

4.	Knowledge is disseminated in an audience-friendly, innovative way;

5.	Interpretation does not indulge in bygone ages only, it keeps a contemporary profile;

6.	The museum inspires both locals and visitors to engage in cultural activities

Let us scrutinize these six characteristics and see what they really mean for planning and communication.

1.	*Exhibitions do not have to be restricted to local issues*. If there are regular visitors from other regions or countries, comparisons of local events and objects with their own culture may convey important messages for them.

2.	*Not only four thematic areas may be targeted* – interdisciplinary exhibitions may involve further branches of science and genres of art.

3.	*Target groups have to be specified*. If we want to communicate with every member of society, young or old, expert and novice, we are likely to fail. We have to identify those who come to visit and also those to whom we have important things to say and address them all. If the museum is near the border of the country, the citizens of the nearby state have to be targeted, too, with explanations in their language and special displays as well.

4.	*Language is a key factor in museum learning*. If we use the local dialect, it may be a friendly welcome for inhabitants of the town, while visitors may have difficulties in understanding it. Scientific accuracy is important, but dry facts and figures are indigestible. (In another chapter, we speak about learning styles of visitors, which also have to be considered).

5.	*Museums are generally associated with the past*. Although it is important to get to know and deeply understand our heritage, most visitors expect to find contemporary and relevant information in an exhibition – an idea or image that may affect their lives. This expectation is not always easy to meet, but there are good methods to build bridges between the past and the present. An example: "This stone axe was found in the yard of the building at 65 High Street." The label implies that Stone Age people actually lived here where we are living now.

4.4. picture: Objects from the past at an exhibition of local history: photographs and glass objects recall an old glass factory that was situated in the town. The decoration of the cases (vases with flowers) indicates the affections of museum staff towards their living environment that has now become the object of a display. Bükkzsérc, Hungary. (Photo: Tamás Vásárhelyi)
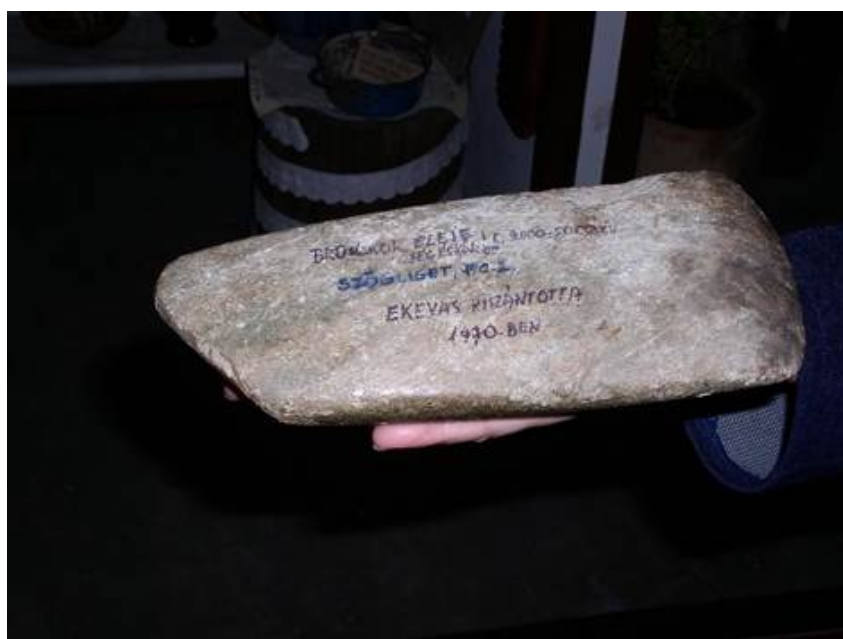
4.5. picture: A stone utensil from the Bronze Age. The inscription is simple and straightforward: "A plough turned it out of the soil in 1970, in Szögliget." The style and format both suggest emotional attachment of museum staff

to the object, although the way of holding the object – letting visitors handle it at all – is questionable. (Photo: Tamás Vásárhelyi)

6.   *There are many exhibition facilities, and many mission statements of museums housed in them*. Not all of these make efforts to engage visitors in further studies or promote other places of (cultural) interest worth visiting. These efforts are worthwhile for the museum, because the experiences obtained elsewhere may help visitors to interpret and complete their experiences.

Exhibitions that consider these aspects will realise the mission statement of the museum and contribute to its sustained, beneficial reception in the local and broader community.

Task 1:

Compile a mission statement for the institution you work for that reflects your position abut the aims and objectives of it. A scheme:

The mission statement of ………….. (institution) is to …..(do what), …. (for the sake of what / whom), …. (to reach what sort of objective).

The statement can be longer and may consist of several passages (cf. the mission statement of the Metropolitan Museum in New York in the "Further readings" section at the end of this chapter). Don't forget that a good mission statement is precise, transparent and clear about actions to be taken. Be honest when formulating the mission – include simple but necessary objectives that have nothing to do with the "greater good" of mankind.

Analyse the activities of your institution: what is in line with this mission statement and what goes against it?

Task 2:

A text below addresses **a special type of visitor**. It is taken from the permanent collection of the Semmelweis Medical Library and Museum for the History of Medicine. Try to describe the visitor this text addresses in detail:

Family background:

Age:

Education:

Profession:

Experiences:

Other characteristics:

The text: „Lajos Winkler (1863-1939), disciple of Károly Than, outstanding figure of analytical chemistry, developer of the gravimetric analysis method. (Memorial medal, Hungarian, 1954)"

The object:

4.6. picture: Memorial medal of Lajos Winkler, bronze relief, 1950. Semmelweis Medical Library and Museum for the History of Medicine, Budapest. (Photo: Tamás Vásárhelyi)

4.2. Exhibition design as a creative act: collections and exhibitions. (Andrea Kárpáti)

"Today's art museums are committed to completing major expansion and renovation projects, and vigorously carrying out their stated missions. These missions typically are concerned with processes of acquisition, preservation, exhibition and education. The National Gallery of Art, for example, is dedicated to 'preserving, collecting, exhibiting, and fostering the understanding of works of art.' Similarly, the Getty Museum at the J. Paul Getty Center seeks to 'delight, inspire, and educate the public by acquiring, conserving, studying, exhibiting, and interpreting works of art.' Such processes are strategic, of course, and give direction and purpose to the range of programmes and services offered by these institutions. Ensuring that visitors are surrounded by works of art 'at the highest quality,' these processes also give rise to a particular view of the museum as an 'object of reflection, contemplation, and discussion.' Although unstated, I shall argue that art museums typically have other missions that are actively, if insidiously implemented through processes of representation (re-presentation), socialization, institutionalization and commodification. The museum functions as a 'socializing institution,' that both represents *and* presents cultural assumptions, as well as social and aesthetic values to young and old alike. These processes succeed in establishing an 'ideology of aesthetic autonomy' — the compartmental conception of fine art that segregates it to the separate realm of the museum. Simultaneously, they present 'ideology in material form.' The museum *itself* is a representation that tends to take on an independent and ultimately self-reflecting existence. In a Debordian view, 'it is a spectacle, which, in its generality, is a concrete inversion of life, and as such, the autonomous movement of non-life.' Through processes of representation and commodification, the spectacular museum is constructed as a frame that influences the public perception of art and society. Moreover, this ideological frame influences how the public experiences constructs of time and place, and how it comes to know about art in relation to the real world. Today's thriving art museums – and the various processes that deliver both their overt and covert missions – are likely to have a greater impact on society than ever before." (Bude, 2012)

In an analysis of mission statements of 59 American museums, even the tag cloud below resulting from the texts offers interesting insights. (Szántó, 2011) However the term "collect" is still most significant, other concepts like "educate" and "understand" characterising educational functions are almost as important. (The museums in this study were mostly fine art galleries, so the words "art" and "contemporary" naturally occur very often.)

4.7. picture: Tag cloud created from mission statements of museums. (Szántó, 2011)

Exhibition organisers have to learn to look at the display through the eyes of visitors. Temporary exhibitions attract new audience segments that, once in the building, will most often see the permanent exhibitions as well. In this way, the major works of the collection of a museum (exhibited permanently) will influence the reception of all the temporary shows – which, in turn, shed new light on pieces of the museum collection removed from their original place at the permanent exhibition to be included in the temporary one. Therefore, curators always have to plan keeping all the exhibitions of the museum in mind.

> „The identification of curator and critic is supposed to explain the work he does, but it is not self-evident. After all, according to the classical modern view of the art system's internal differ-entiation, distinguishing the positions of artist, dealer, collector, curator, and critic, the last two play different roles for the audience. The curator is the pantheon's administrator, representing the position of the museum, the hierarchy, the tradition. The critic, by contrast, thrives on con-troversy among the contemporaries; he or she speaks out in newspapers and journals (and now possibly in blogs), stages polemical interventions, and insists on timeliness and topicality. In slightly different terms, we might say that the two stand for an antagonism between the positions of the public institution and the intellectual market. Turning history into tradition is one thing; helping define the direction of the present, another. Someone who would do both must depart from the museum and take the controversy to a different level." (Bude, 2012)

This description of roles and responsibilities is especially true with temporary exhibitions, those that clearly want to help define the present, as Bude says. When looking at an arts and crafts show, we may ask, what the role of art and design in society is, and what could it be? How can it change our lives if we know the questions to ask designers in order to get useful answers? What is the design process, after all? How much art, how much technology? – Such questions are asked by professionals and laypeople alike. A recent temporary exhibition at the Victoria and Albert Museum, London, intended to clarify these issues in a way all stakeholders can benefit.

4.8. picture: "DesignLab: Designing the Future. Creative collaboration with the Seymourpowell Company and the educational programme of V and A". Documentary exhibition at the Victoria and Albert Museum in London, 2011. (Photo: Andrea Kárpáti)

4.9. picture: Poster documenting the process from the first sketch to the finished product design. "DesignLab: Designing the Future". Victoria and Albert Museum, London. 2011. (Photo: Andrea Kárpáti)

4.10. picture: DesignLab: Designing the Future. Documentation of a brainstorming session that was part of a documentary exhibition at the Victoria and Albert Museum in London, 2011. (Photo: Andrea Kárpáti)

The temporary show at the Victoria and Albert Museum can also be interpreted as an *explanation* of the conception, development and functional, aesthetic and sociocultural messages of the permanent exhibitions: charts and design objects from all over the world. Other temporary exhibitions are *reactions to the permanent display*.

> I am going to begin with a very brief glimpse at two exhibitions that I was co-curator of, very different exhibitions at very different moments in time. The first one was at the Pitt Rivers Museum in Oxford where I was curator, signalled by the black and white nature of the image. This was an exhibition as part of a series of exhibitions with a slightly imperial title of 'Australia in Oxford' that we curated in 1988. The primary objective of this exhibition was to emphasise the aesthetics of Indigenous Australian material culture under the constraints of the collections that were in the Pitt Rivers Museum and the fact that it had to be in harmony with the Pitt Rivers Museum as a whole. You can see the way that the Pitt Rivers Museum relatively recently has displayed boomerangs and in fact the permanent display at the Pitt Rivers Museum is in this particular way. I think Danie Mellor has produced an artwork responding to this [perhaps even] assuming that it was a nineteenth century mode of display, because in the nineteenth century they were all ordered as a row of soldiers side by side. But the constraints include the fact that when one is exhibiting a large number of objects, which in some senses was a requirement of a museum that has an emphasis on open storage and on making large numbers of objects accessible, when there is relatively little documentation associated with the object it is going to influence the way that one does it.

> "The other thing is at that particular moment in time we were very concerned to demonstrate continuities as well as to link in with the aesthetics of Indigenous Australian art. You won't be able to see this in the two photographs I am showing, except very briefly. You can see one of the continuities in the associations between paintings from Yuendumu – that was one of the first paintings produced at Warlukurlangu – juxtaposed with works that came from much earlier collecting eras. But I am not going to dwell on that exhibition, nor am I going to dwell on the next exhibition that may be familiar to people here in that this was one of the opening exhibitions at the National Museum of Australia. (…) I think a national museum has to conceptualise itself as something which has interlinkages across the nation with that particular diversity. You want a national museum that links in with local museums and that links in with Indigenous cultural

centres and that has a dynamic relationship in those particular contexts. That probably fits in with the thing that I was saying that one has to begin to see museums as a whole and that the parts are if you like little statements or speeches that come out of a whole that is highly productive and dynamic." (Morphy, 2009)

In this case, the temporary show reflects the permanent collection, and vice versa. The museum's collection as a whole is used to enter into dialogues with other institutions and co-organise temporary shows as interpretations of the collections of each of them. Another way to perceive temporary installations is *to re-contextualise objects*. (Endzweig, 2011) For a short time period, collection items leave their storage boxes and become meaningful objects again. They are placed in dioramas resembling their place of origin, where they are surrounded by other objects that help understand their meaning and use. Thus the temporary display works like the kiss of the Prince who wakes up Sleeping Beauty to return to life after decades of dreaming in her forsaken castle. The temporary exhibition that singles out a few highlights of the collection offers multiple viewpoints and rich scaffolding for the visitor to make a personal meaning of the objects.
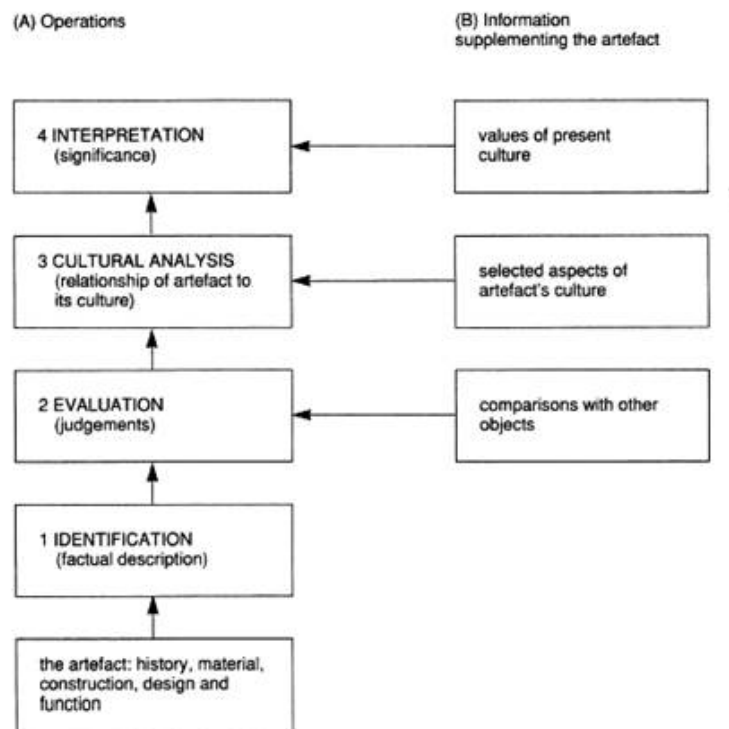
4.1. graph: Model for artefact studies (after E. McClung Fleming 1974, in: Pearce, 1994, Fig. 18.1)

Temporary shows often invite visitors to *have a glimpse behind the scenes* and see how the museum functions as a research and conservation centre. In the spring of 2012, the staff of the Hungarian Museum of Fine Arts had to face an unexpected and extremely difficult to handle situation: the planned closure of the museum building for a major enlargement of the basement and its development into a visitor centre was postponed. No exhibitions were planned for the 6-month closing period, so the museum leadership had to improvise.

They invited a successful show curated by another museum and managed to add important works that offered new insights about the theme of the show. However, their most successful move was to invite visitors to be part of exciting scientific discoveries in connection with objects that are intriguing for all the visitor types we quoted above: Egyptian mummies. Let us see why different visitor types find such an exhibition worth a visit.

Explorers find them exciting because of the new tools and methods of scientific investigation that make it possible to reveal their age, exact place of origin, diet and possible cause of death. *Facilitators* have an easy time motivating their family and friends for a visit, because beautifully decorated sarcophagi and funeral masks are shown at school when the history of ancient Egypt is taught. Mummies are part of the crime story and horror movie culture as well. *Experience seekers* are fascinated by documents about mummification procedures of later ages exemplified by bodies found in the cellar of a Hungarian church. They also find it fascinating to realise that their countrymen have

discovered important burial sites of ancient Egypt and wanted to hear stories about the finds as well as the innovative restoration procedure.

4.11. picture: Mummies. Temporary exhibition at the Museum of Fine Arts in Budapest, 2011. (Photo from the website of the show: Budapest Mummy Project).
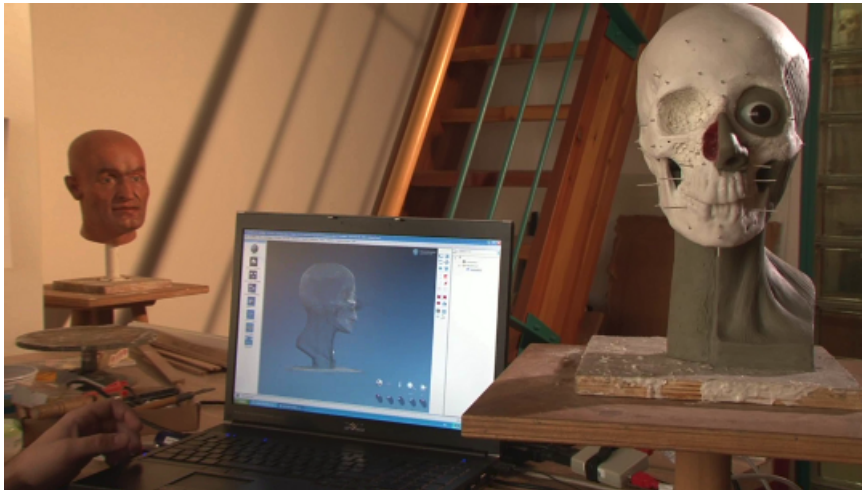
4.12. picture: Building a model of a man's face based on a computer-supported analysis of his skull. Mummies. Temporary exhibition at the Museum of Fine Arts in Budapest, 2011. (Photo from the blog on the website of the exhibition: Budapest Mummy Project).

Professionals and hobbyists enjoy the detailed scientific interpretation of the conservation of the human body and the documentation of excavation sites through film shows (among them, a 3D movie produced especially for this exhibition). The website including researchers' blogs satisfies their need for scientific data and also offers further reading. Finally, Rechargers find a quiet place to linger at the museum shop and café situated next to the display and furnished with posters and souvenirs inspired by the exhibition.

This temporary exhibition was an excellent example of a display that sheds new light on a part of the museum collection permanently exhibited. After having seen the mummies, visitors often continued their walk in the permanent Egyptian collection because they wanted to see more of the art and culture of ancient Egypt.

4.13. picture: Scientific information on the research-oriented web site of a temporary exhibition. Mummies. Temporary exhibition at the Museum of Fine Arts in Budapest. (Photo from the website of the show: Budapest Mummy Project.

According to Susan Pearce, an exhibition is a historic phenomenon just like the objects that are exhibited. (Pearce, 1999). An exhibition that was full of provocative, new ideas when it first opened a decade ago may seem a boring commonplace today. Temporary exhibitions bear the stamp of their age, too: they not only document curators' viewpoints but also show how certain themes and styles were interpreted by visitors. Critiques about and audience reactions to temporary shows introduce us to the way of thinking of previous generations. The way we respond to current exhibitions mirrors the flexibility of thinking and openness to new values and ideas of contemporary society (or the lack of them). Here is a list of exhibitions just opened when this chapter was written (April-May, 2013) that offer new perspectives based on the collection of their institution.

– Ohnmacht als Situation: Democracia, Revolutie & Polizey. Ausstellungsprojekt mit Diskurslabor. (Fainting as a situation: Democracy, Revolution and Police. German language orthography used in the documentation of the show.) Frankfurter Kunstverein, 13 June – 4 August 2013

– Think Global! Build Social! (Original title is in English.) Deutsches Architekturmuseum (German Museum of Architecture), Frankurt am Main, 8 June – 1 September 2013.

– Meilensteine des Wissens – Meisterwerke der Kunst. (Milestones of Knowledge – Masterpieces of the Arts.) Zwinger, Mathematisch-Physikalisches Salon (Mathematics and Physics Parlour), Dresden, permanent exhibition opened in May 2013.

– Herod the Great: the King's Final Journey. Israel Museum, Jerusalem, 13 February 2013 –4 January 2014.

– Juden. Geld. Eine Vorstellung. (Jews. Money. A Conception.) Jüdisches Museum, Frankfurt am Main, 25 April – 6 October 2013.

– Ice Age Art and the Arrival of Modern Mind. British Museum, London, 18 May – 2 June 2013.

– Code Breaker. Celebrating a British Pioneer. Science Museum, London, 21 June 2012 – 21 October 2013.

– Wisdom of Astraea... Freemasonry in the 18th and First Third of the 19th Century - Objects from the Hermitage Collection. Winter Palace, St. Petersburg, 18 May – 1 September 2013.

4.3. Selecting objects for an exhibition: prestige, security and protection of objects (Tamás Vásárhelyi)

When an exhibition is organised, the museologist responsible for the part of the collection to be used offers objects for the display. He or she is the one who knows the content of the storage rooms and may make a selection based on a variety of considerations. Some of these are not strictly professional. If a high-ranking politician has been invited to open the show, something unusual in the exhibition has to be offered to attract media attention, which the great man may appreciate. If it is a sponsor the exhibition should impress, the most valuable treasures must be showcased. In the case of a professional exhibition to impress fellow researchers, the number of objects to be exhibited increases. In every case, *conservation* is one of the highest priorities. Being exhibited may be very damaging for some ancient pieces. For others, the exhibition offers a long-awaited chance for restoration.

Security is another key issue in the planning process of an exhibition. Every exhibition is insured against theft or damage, but today, insurance has also become one of the prestige criteria of a show. The higher the amount, the more it is evident that visitors are in for the experience of a lifetime. Nevertheless, museologists are good keepers, whose major consideration have been and will always be to safeguard the possessions of their museum. Thus the most valuable objects often remain in storage and are only referred to in the catalogue. Works of art may be damaged by air pollution or humidity, but it is people in contact with the works who are most harmful. Conservators who apply inadequate chemicals or procedures, exhibition developers who place them on a stand that eventually breaks, transporters who do not handle them with care and visitors who run around and make every effort to touch them – sometimes even take them home – are the biggest risk factors of museums. Smoke and movement detectors are well-known and generally disregarded parts of an exhibition. Security barriers, however, are disturbing, and so are stands that are too high or too large. Alarms that make an awful noise when you approach a painting close up also intrude upon the visitor experience, not to speak of guards who sometimes act like bodyguards and consider every visitor a suspicious intruder.

4.14. picture: A barrier too low for keeping visitors off – a regular sight at exhibitions. (Photo: Tamás Vásárhelyi)

4.15. picture: The stand is much higher than required for the exhibition of the bull: it keeps visitors at a safe distance and prevents them from touching. (Photo: Tamás Vásárhelyi)

*4.16. picture: The blue, flexible ribbon of the barrier is a disturbing sight in front of the beautiful old sailing boat.
(Photo: Tamás Vásárhelyi)*

4.17. picture: The barrier keeps visitors away from both sides of the boat. (Photo: Tamás Vásárhelyi)

Guards are inhibiting for visitors, just like barriers. In Hungarian museums they tend to bring personal objects into the exhibition space (a pillow for their chair, a bottle of water, a newspaper, etc.) This arrangement is an unsuitable contribution to the exhibition and often prevents visitors from approaching the objects at close range.

4.18. picture: Personal object of museum guards may disturb visitor experience. (Photo: Tamás Vásárhelyi)

At an exhibition of precious stones at the Hungarian Museum of Natural History, visitors were willing to pass through the metal detector and readily opened their bags for inspection by the security guard, since it reinforced their expectations of valuable objects.

The most common form for the safe exhibition of objects is the *glass case*. Pieces of old museum furniture: huge cases with wooden frames may be an awkward sight in a modern exhibition space, but visitors accept them as they contribute to the mood of a place safeguarding "old objects". Modern installations are light, flexible and made of non-glittering glass. They serve the purpose of supporting but not blocking the view of the items on display. Exhibition designers sometimes deliberately use bulky cases that, in their interpretation, emphasize the message of the display. An ugly presentation environment is often due to limited financial resources. The lack of funds to have enough cases made or rented for an exhibition may limit the number of objects to be shown.

4.19. picture: Classic „coffin cases" in a museum that deliberately preserved its installations of historic value. A protected cultural heritage environment: furniture of the Mineralogy Collection of the Museum of Natural History at Eötvös Loránd University, Budapest. (Photo: Tamás Vásárhelyi)

4.20. picture: The case is robust, still the objects stand out in front of the red background. (Photo: Tamás Vásárhelyi)

4.21. picture: The sight of the glass cases is a dominant factor in the exhibition environment. (Photo: Tamás Vásárhelyi)

4.22. picture: The glass cases are visible but not dominating in the beautiful, vaulted hall of the Marine Museum of Lisbon, Portugal. (Photo: Tamás Vásárhelyi)

4.23. picture: The exhibition environment is so impressive that we hardly notice that all the exhibits are behind glass. Museum of Natural History, Lisbon. (Photo: Tamás Vásárhelyi)

4.24. picture: Installation well suited to the neutral environment. (Photo: Tamás Vásárhelyi)

4.25. picture: Installation individualised through colouring and the application of sand to fill up the lower part of the cases. „Glittering gems”: an exhibition at the Hungarian Museum of Natural History, Budapest. (Photo: Tamás Vásárhelyi)

4.26. picture: The irregular distribution of space and the unique arrangement of the gems in decorative patterns as well as spotlights focused on them to provide a glittering effect all hide the fact that the installation used is an old-fashioned glass case. „Glittering gems”: an exhibition at the Hungarian Museum of Natural History, Budapest. (Photo: Tamás Vásárhelyi)

To provide an environment that is ideal for the works on show, we need to use a variety of often bulky evaporation, heating and lighting devices. Visitors accept them but we should make efforts to hide them in the installation. The following pictures show such equipment in different exhibition arrangements.

4.27. picture: An air conditioning device in an awkward position in a narrow museum corridor.(Photo: Tamás Vásárhelyi)

4.28. picture: An example of unfortunate arrangement of devices and objects in a display: three light cables very near an object in a glass case. (Photo: Tamás Vásárhelyi)

4.29. picture: A second example of unfortunate arrangement of devices and objects in a display: the air conditioning device could have remained unnoticed, but the fire extinguisher and dustbin nearby emphasize the presence of objects unsuitable for an exhibition. (Photo: Tamás Vásárhelyi)

4.30. picture: In the glass case, the thermometer with its huge digital display is a disturbing sight. (Photo: Tamás Vásárhelyi)

Exhibition developers often have to make compromises. They have to include objects that are not easily integrated in the display; there are concepts that have to be emphasized which, however, have little scientific significance or aesthetic appeal; and there can be a lack of funds to purchase the most appropriate installation. Thus the development of an exhibition involves a process of creative compromises. The results are, fortunately, most often appealing and instructive at the same time.

Task 3:

There is a conspicuous object in the picture below. Please provide it with a caption for

1. an exhibition about medical history;

2. a display about the effects of diet;

3. a contemporary art show.

We provide you with three titles suitable for each exhibition:

A. The future of mankind?

B. Nibbles cause excessive stomach and abdominal fat.

C. An ideal woman or man?

*4.31. picture: John Isaacs: I can't help the way I feel. Sculpture with visitors at the exhibition of the Wellcome
Collections. (Photo: Tamás Vásárhelyi)*

Task 4:

Imagine you have to explain the object in the image below to

–   a child in a kindergarten group;

–   a student of an eighth grade school group;

–   a head technician from a engineering factory;

–   a female, retired junior school teacher.

4.32. picture: Two cog wheels with peculiar shapes that set each other in motion. Istituto e Museo di Storia della Scienza, Florence. (Photo: Tamás Vásárhelyi.)

4.4. Making science understood – interpretation of scientific discoveries for the average visitor (Tamás Vásárhelyi)

Dissemination of results is part of the process of scientific research that puts new ideas to test and, at the same time, makes them part of professional discourse. When publishing research, we communicate with peers who understand our way of expression, even if our mother tongues are different and we have to resort to a language we have mastered to varying degrees. The style of scientific communication among professionals in the same field is concise, accurate and focused. (In descriptive zoology, scientific dialect is deprived even of the use of the English substantive verb.) In communicating about science, we often use abbreviations (an obvious example is the periodic table of elements), we resort to a *terminus technicus* to spare an explanation and use a combination of letters to indicate complex chemical compounds. Formulae in mathematics and chemistry replace long textual explanations.

Scientific visualisations are graphic interpretations of research results. They appear on conference posters and presentations and represent facts and data in novel, expressive, but sometimes ambiguous forms. In conference presentations or in a book, these graphs and charts are intriguing supplements of verbal information. Researchers (or designers helping them) are very inventive when designing their posters: they often use puns and gags, sometimes even involve the third dimension and attach real objects to images. Bold, large lettering, colourful photographs, diagrams and other forms of imaging call attention to new results.
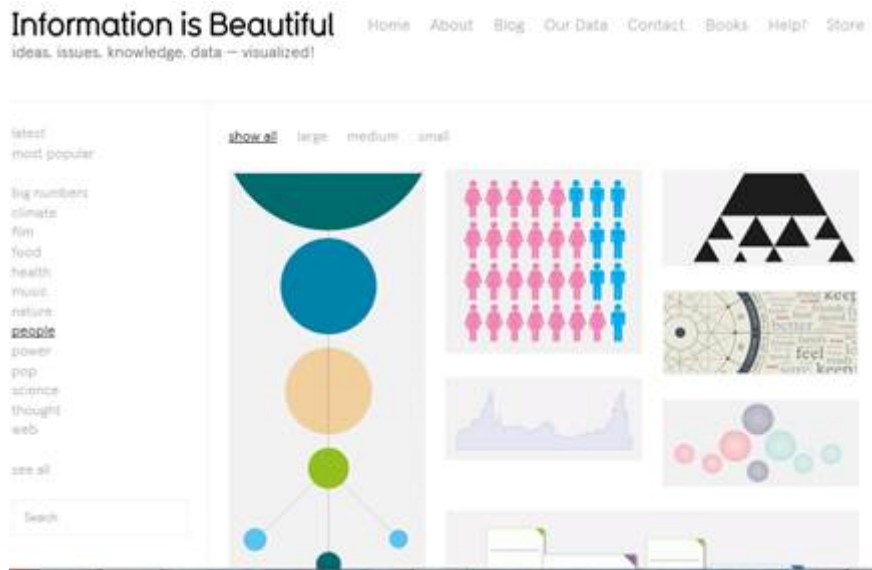
4.33. picture: Information is beautiful – page from a blog on visualisation
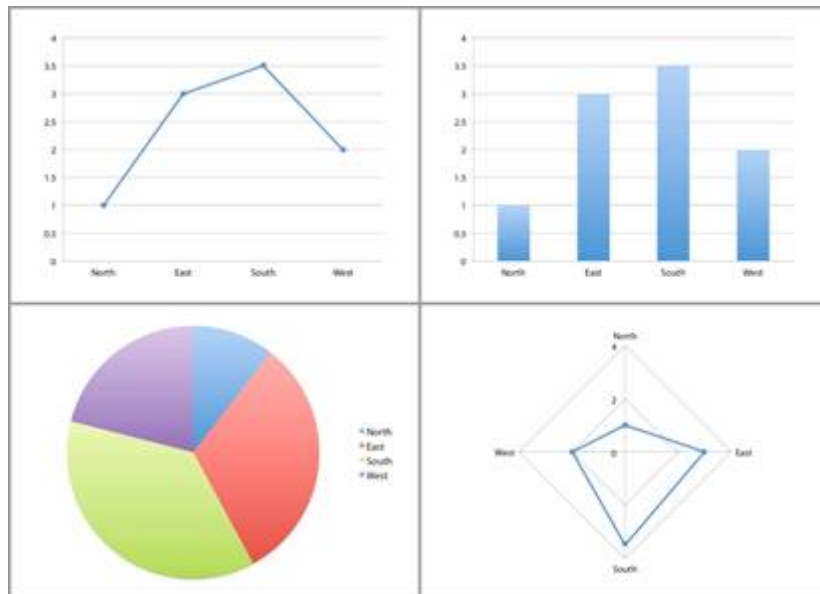

4.2. graph: Four types of graphical representation of the same dataset: above: linear and bar-chart, below: 2D pie-chart and spider web diagram.

4.34. picture: Three poster styles. On the left: precise text boxes, in the centre: somewhat stilted lettering, on the right: minimal information: this poster is used to lure visitors to the project's home page. (Photo: Tamás Vásárhelyi)

What if experts have to communicate science to laypeople? They are often unable (or unwilling) to alter their professional mode of expression and keep on using abbreviations and phrases that no one outside their area of study is likely to understand. The use of Latin and Greek words is also an inhibiting factor as these languages are no longer part of the knowledge base even of university graduates. There are two reasons for the use of these phrases: scientists find them natural, and, in many languages, these phrases have no exact translations. Moreover, laypeople tend to find a presentation more "scientific" and trustworthy when the speaker uses words the audience has not heard before.
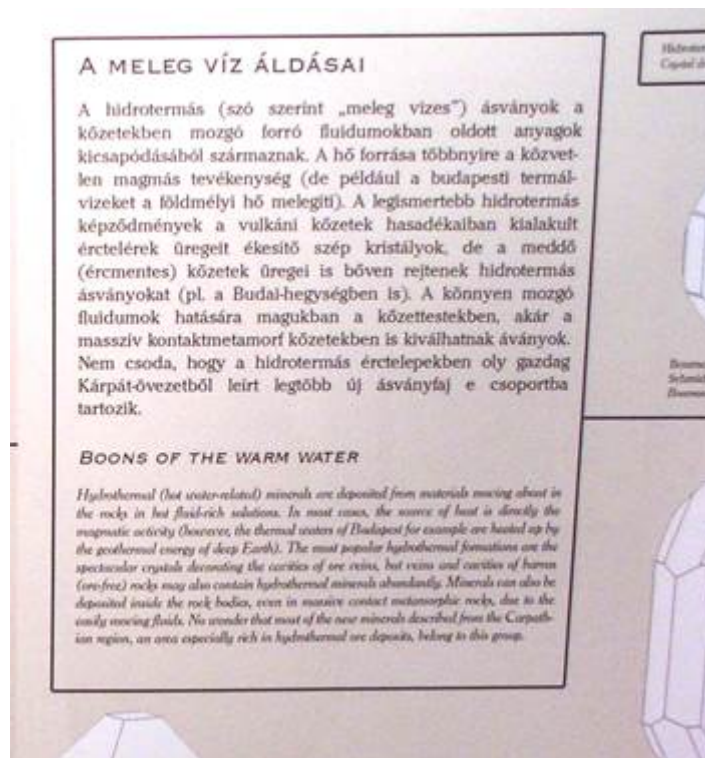
4.35. picture: An example of the overuse of science and technology concepts that will not be understandable for the average visitor. Text writers are often pressured by museologists for a more scientific wording. Hungarian Museum of Natural History, Budapest. (Photo: Tamás Vásárhelyi)
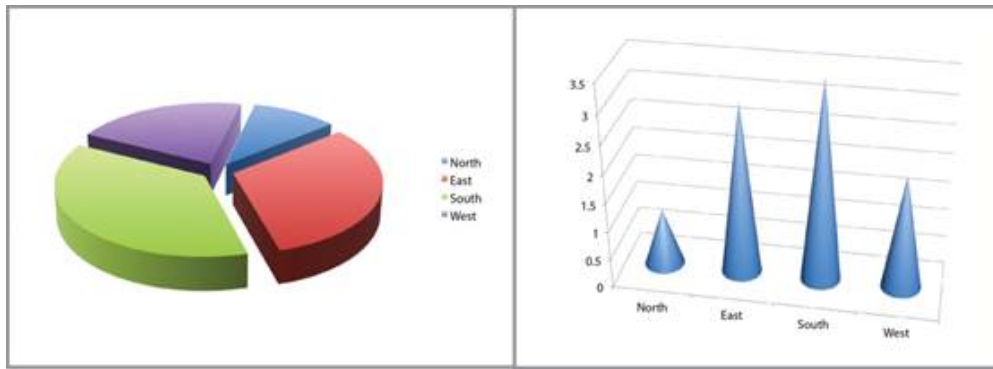
4.3. graph: Data presented on Graph 4.2 in two more effective visual interpretations: pie chart and cylinder diagram.

If we intend to show results of scientific research, we should use simple explanatory language and visualisations to represent important data. Didactic interpretation should be our guiding principle. Utilising genres of scientific communication is well-known from the media: illustrated, short texts, picture sequences with catchy captions or film strips as teasers are important for our audience to be able to understand sophisticated messages. Learning styles of visitors (be it verbal, visual, kinetic-multimodal or mixed) should also be considered.

4.36. picture: Humour helps make complicated scientific issues digestible. The poster uses the well-known slogan of the Benetton fashion design company ("United colours of Benetton") in a twisted form to explain the multiplicity of the colouring of the wings of butterflies and their meaning. Zoology Museum, Rome, Italy). (Photo: Tamás Vásárhelyi)

4.37. picture: Humour used to interpret a serious issue: infection caused by bugs feeding on the leftovers in a household. The dinner table seems to have been laid for the bug to dine there. A measuring device placed on the right side of the table, showing actual proportions, provides the installation with an element of scientific accuracy. Hungarian Museum of Natural History, Budapest. (Photo: Tamás Vásárhelyi)

4.38. picture: Birds are rarely used as "stuffed objects" only. Here, however, the message of the installation is the variety of colour hues in nature. In the box, colours of feathers are dominant; no other feature of the birds attracts attention. Zoology Museum, Copenhagen, Denmark. (Photo: Tamás Vásárhelyi)

The next images show the presentation of body structures of animals – an exhibition development problem solved in a variety of different forms by developers around the world.

4.39. picture: Grotesque installations. On the left: the skull of the turtle and bones of its legs are inserted in a natural arrangement in its tortoise shell. On the right: phases of the preparation of a stuffed animal, shown on the body of one squirrel. (Photo: Tamás Vásárhelyi)

4.40. picture: On the left: fur of a fox, its body made of gypsum and the animal ready for show, with the fur applied on the gypsum body. On the right: stuffing the shell of a turtle to develop an exhibition item with a solid body. (Photo: Tamás Vásárhelyi)

4.41. picture: This installation shows how the relatively small body of a bird is enlarged by its feathers. (Photo: Tamás Vásárhelyi)

The environment may alter the meaning of an exhibited object completely. Sometimes long texts are replaced by a short and catchy phrase that conveys the meaning in a more expressive manner. We give examples of both exhibition arrangements in the following pictures.

4.42. picture: An object that helps us to understand the meaning of an exhibited item: the print on the stone comes to life when we look at the reconstruction of the animal whose remnants are conserved in the stone slab. (Photo: Tamás Vásárhelyi)

4.43. picture: In order to present an animal that has become part of the urban environment, the exhibition designer shows how it actually intrudes into our realm, looking for food in the garbage. (Photo: Tamás Vásárhelyi)

4.44. picture: The beaver and the trunk with the traces of its teeth are both interesting objects for an exhibition – when shown together, however, it is easy to discover how the trunk obtained its peculiar shape and how beavers feed on wood. (Photo: Tamás Vásárhelyi)

Multisensory exhibition solutions may serve the purposes of a variety of didactic interpretations. They are extremely beneficial for promoting a deeper understanding of natural processes. Museums are on the lookout for new exhibition ideas and sometimes even copy successful solutions from one another. In the pictures below we provide an overview of such solutions in different collections.

4.45. picture: The uneven surface of the floor supports the mood of the mineralogy exhibition. Museum of Natural History, London, UK. (Photo: Tamás Vásárhelyi)

4.46. picture: Layers of rock produced during the phases of the formation of the Earth. The formation of rocks is illustrated by the piled up newspaper collections where the oldest papers are at the bottom. Museum of Natural History, London, UK. (Photo: Tamás Vásárhelyi)

4.47. picture: Volcano eruptions are a catastrophe for people. The car provides the impression of a tragic escape. The lights are on, the doors open and the vehicle is covered by dust – passengers must have left it in frenzy. Museum of Natural History, London, UK. (Photo: Tamás Vásárhelyi)

4.48. picture: : On one occasion the effects of an earthquake were documented by a shop camera. We can see how objects start dancing on the shelves; the room seems to be moving. Visitors hear the noise, feel the shaking of the floor (through a motion engine underneath), and thus experience some effects of the earthquake. Museum of Natural History, London, UK. (Photo: Tamás Vásárhelyi)

4.49. picture: Questions in the exhibition environment provoke visitors to think about security issues in connection with potential earthquakes. The dinosaur exhibition of the Natural History Museum in London is developed in an educational manner, guiding the attention of visitors throughout the flow of huge spaces. (Photo: Tamás Vásárhelyi)
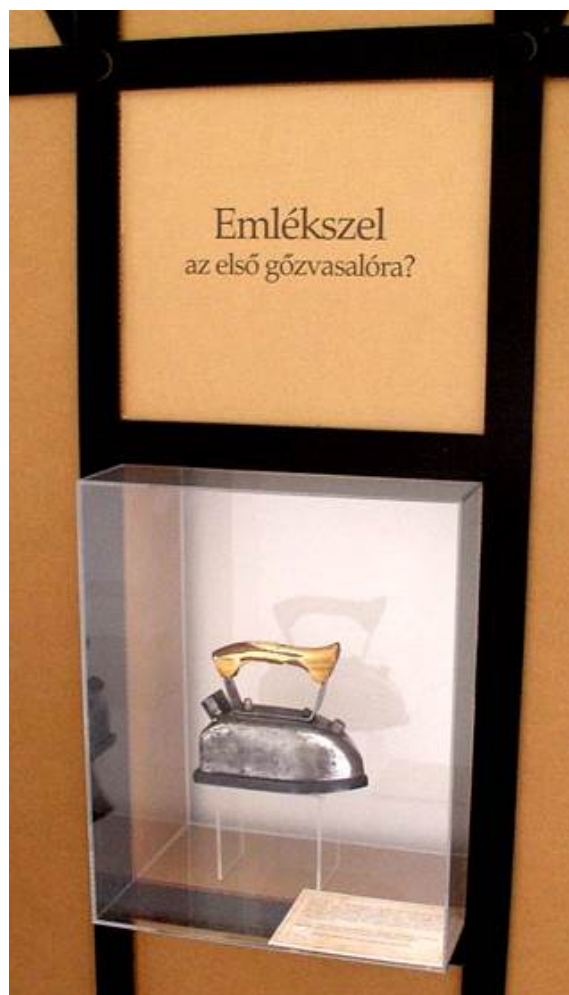
4.50. picture: "Do you remember the first steam iron?" – A good Hungarian example for the use of questions in exhibitions. The short quiz invites you to stop and recall personal memories and, at the same time, teaches about the object exhibited. (Photo: Tamás Vásárhelyi)

4.51. picture: Classic, iconic museum scene: children filling out a task sheet make use of knowledge and experiences gained during their visit. (Photo: Tamás Vásárhelyi)

Further reading

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Chapter 5. Exhibition types and their characteristics

Exhibitions may be characterised by content, genre and venue, or the type of audience to focus on. In this chapter, we characterise major types and describe how they influence planning and visitor management.

5.1. Technical aspects

(Tamás Vásárhelyi)

Venue

There are national heritage sites (in Budapest, Heroes' Square and the Buda Castle District are such examples) where the genius loci contributes to the exhibition, even if it is not utilised by curators or developers. In some cities like Berlin or Vienna, museums are concentrated on "museum islands". Other museums are isolated because they are in the outskirts of a big city, or the locations they are situated in are far away from regional centres.

5.1. picture: Main façade of the Hungarian National Museum. This site assumes a particular significance because it is traditionally the main venue of the 1848 Revolution celebrations on 15 March. (Photo: Tamás Vásárhelyi)

5.2. picture: The neo-Gothic entrance and façade of Vajdahunyad castle – an eclectic architectural monument that houses the Museum of Agriculture. Many visitors enter the site in order to experience the historic mood of the building. (Photo: Tamás Vásárhelyi)

5.3. picture: Rear courtyard of the Museum of Gold Treasures from South-East Asia founded by István Zelni – the opening ceremony. The Oriental sculpture garden prepares for the visit or sustains the mood of the objects just seen. (Photo: Tamás Vásárhelyi)

5.4. picture: The Königsplatz (King's Square) in Munich, Germany, with three museum buildings erected in the style of ancient Greece On the right: façade of the Glyptothek, dedicated to classic Greek and Roman sculpture. It can only be approached through the square – a spatial experience that prepares for the visit. (Photo: Tamás Vásárhelyi)

As could be seen in the third chapter of this book, exhibitions may be organised in the most unusual places – on a lake, for example. Some of the displays have restricted access; others are only visible for a short period of time. All these aspects have an effect on the arrangement of an exhibition.

5.5. picture: The „Globe Aula" of Eötvös Loránd University (ELTE). Its function is not obvious: is it a reception or chill-out area, an exhibition space or a storage facility? (Photo: Tamás Vásárhelyi)

5.6. picture: The Palaeontology Collection of the Natural History Museum of ELTE. The exhibition hall is situated in a courtyard of the building. After dark, the museum is illuminated, and the pyramid shaped glass walls are an impressive sight. The row of chairs and the projection screen shows its double function. (Photo: Tamás Vásárhelyi)

5.7. picture: Exhibition of palaeontology at the University of Munich, Germany. The space could be used by students, but the huge exhibit prevents all other functions (Photo: Tamás Vásárhelyi)

5.8. picture: University buildings often double as exhibition spaces. (Photo: Tamás Vásárhelyi)

5.9. picture: This exhibition furniture reflects its function better than the poster-like, thin wall cases in the picture above. (Photo: Tamás Vásárhelyi)

What makes an exhibition space unusual? In this chapter we discuss this issue from a technological viewpoint. Perhaps the space it occupies is peculiar: it is in a cave underneath a hill, (like the Cave Hospital on Castle Hill in

Budapest) or an exhibition on a lake (like the "Art on Lake" exhibition mentioned in Chapter 3), or falling rocks on a peaceful street (with a sculpture that includes elements hanging from the roof of a house.)

5.10. picture: Falling rocks in Ljubljana. It is an awkward feeling to walk underneath this sculptural installation. The work also has a humorous effect: a rock has hit and smashed the street sign indicating „Danger! Rocks falling!"
(Photos: Tamás Vásárhelyi)

Unusual arrangements often present conservation problems. A low or high level of illumination, damage caused by sun rays or air pollution or street furniture that cannot be harmonised with the temporary exhibits often limit the number of items we can display. In other cases, the unusual scenery produces beneficial effects and provides an inspiring context for an exhibition. Many industrial buildings have been remodelled into exhibition areas, because the large spaces designed for industrial production and the steel structures of the ceiling produce an interesting contrast with the works exhibited. In the pictures below we show how these effects are put to use by exhibition developers.

5.11. picture: This museum hall recently burned down. Until there are enough funds to renovate it, exhibitions are organised in the damaged building. National Museum of Natural History, Lisbon. (Photo: Tamás Vásárhelyi)

5.12. picture: Exhibition organised in a former partisans' hiding place in Slovenia. The venue and its historic connotations contribute to the special appeal of the small wooden structure, which could also be interpreted as an exhibition object. (Photo: Tamás Vásárhelyi)

5.13. picture: The black, angular background of an old industrial site is contrasted with the white, rounded shapes of the marble sculptures. Centrale Montemartini, Rome. (Photos: Tamás Vásárhelyi)

Duration

The duration of an exhibition varies from a very short time span up to years and decades.

–   **Chamber exhibition**: a small-scale display that is open for a short time period –a few hours, a day or a week. Such exhibitions are organised for conferences, trade shows or festivals.

–   **Temporary exhibitions**: regularly organised by museums with large collections which last for a few weeks or months. (The duration depends on the availability of the works on loan, the number of potential visitors, the schedule of the exhibition facility etc.)

–   **Permanent exhibition:** it may stand for years. Museum staff generally consider an exhibition outdated after five to ten years. In such a time period, the exhibits wear out, the installations fall apart and also the content and message of the display become outdated. The style of museum communication also changes and makes an old exhibition appear obsolete. Nevertheless, financial reasons sometimes keep permanent exhibitions in place for 20-30 years. Such displays are visited by professionals for their "museum of museology" appeal. There are also visitors who actually prefer traditional installations of the type they have seen during school visits and which they can now share with their own children.

–   **Travelling exhibitions** provide a transition between the two latter types: they can be on loan at a venue for years, or else be open for a month at each venue. They are like franchises: their content and form is more or less constant, but items from the museums that temporarily house them may be added to the display.

5.14. picture: A typical example of the chamber exhibition is the mobile exhibition. A two-day exhibition about the trip to Italy of an early 20th-century painter, István Szőnyi, situated in an art object transportation van at the tra- ditional museum festival of Hungary organised each year in the month of May. (Photo: Tamás Vásárhelyi)

5.15. picture: The exhibition was produced with the same care as if it were installed in a museum. Photo documents, works of art and their labels are arranged to produce a gallery effect. (Photo: Tamás Vásárhelyi)
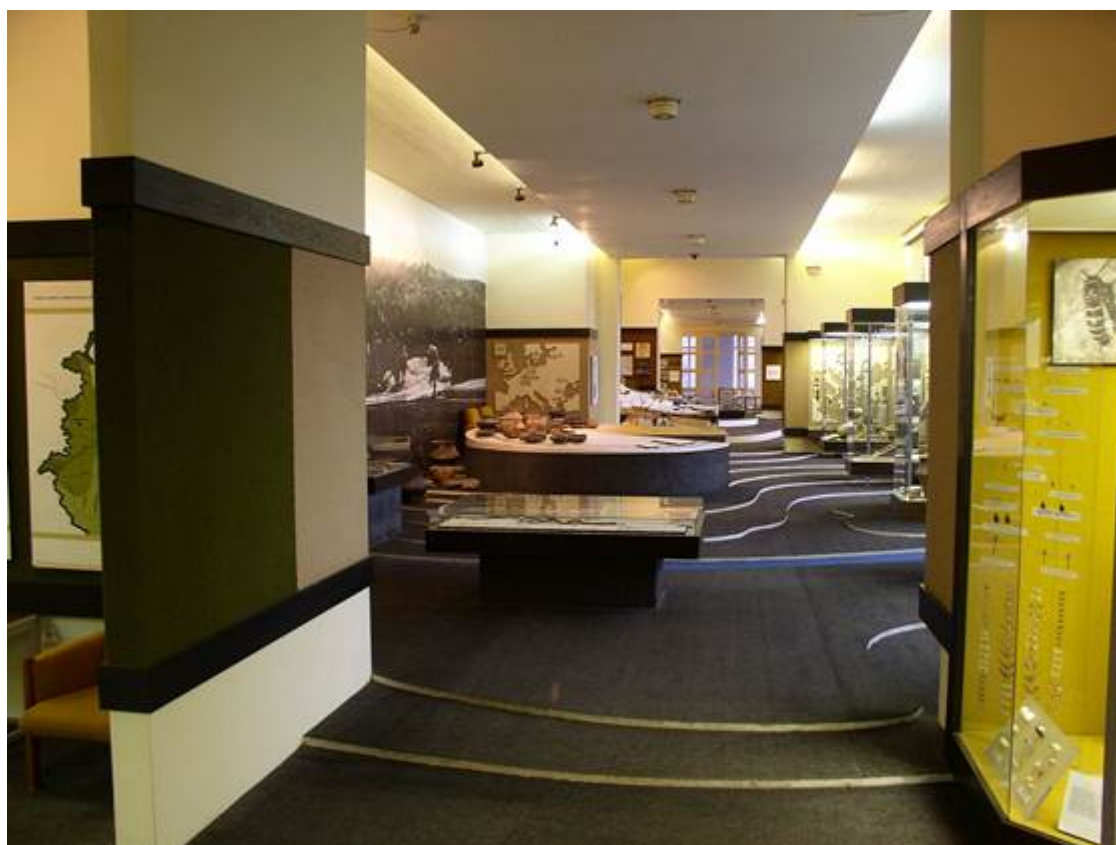
5.16. picture: A good example of the permanent exhibition. Its installation was innovative at the time of its opening; therefore, it could easily survive the typical life span of such an exhibition in Hungary, 30 years. (Photo: Tamás Vásárhelyi)

5.17. picture: The armchair in front shows the age of the information panel. We would not design anything similar today: the precise geometrical arrangement of long text panels with small images is outdated. (Photo: Tamás Vásárhelyi)

5.18. picture: Leaves fade in less than three decades and make an installation look dingy. Today we would rather use colour photographs instead of pressed leaves. (Photo: Tamás Vásárhely)

5.19. picture: The old-fashioned installation is forgotten when we notice the interesting, original medical instruments. Simplicity here is not a handicap although contemporary exhibition design prefers richer, more picturesque effects. Semmelweiss Museum of Medical History, Budapest. (Photo: Tamás Vásárhelyi)

The life span of an exhibition is a matter of professional decision, even in the case of permanent displays. We can plan for a change, but there is always unexpected damage that calls for immediate action. Unfortunately, Hungarian exhibition developers are inclined to leave an installation unchanged even if it turns out to be faulty immediately after the opening. Lack of funds and motivation are inhibiting factors that prevent immediate reaction to mistakes.
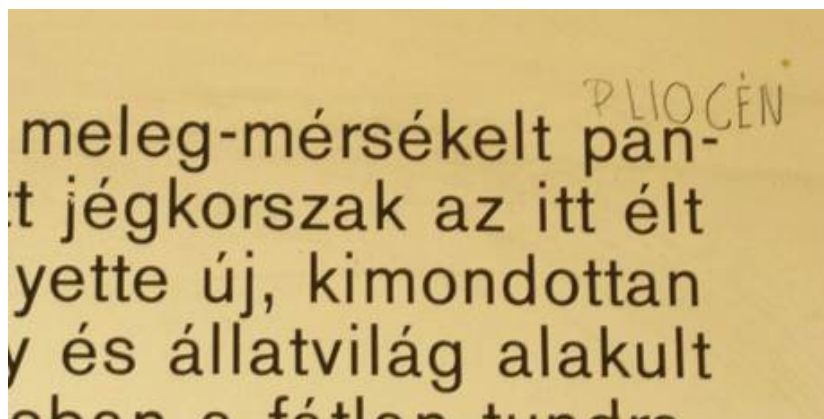
5.20. picture: How long has this panel been in place with the correction by a knowledgeable visitor in one of its corners? (Photo: Tamás Vásárhelyi)

Space and scope

The space an exhibition occupies depends on its type. A *unique installation* is a significant, usually large object placed in an entrance hall or other central location. A *chamber exhibition* may be situated in a small hall, but it could involve one glass case only, or a corner in a research lab with old tools. A showcase in a shopping mall or trade fair also belongs to this type of exhibition. Many museums reserve one hall for temporary exhibitions. These spaces are usually rectangular and easy to view as a whole, but with dividing panels an intricate spatial arrangement can also be achieved. If this hall can only be accessed through galleries of the permanent exhibition, the temporary exhibitions act like a natural extension of the permanent collection on view. Museum spaces can be turned into an intricate network where visitors easily lose their way. In the galleries, room numbers and arrows indicate the sequence of a visit preferred by curators. However, these are often ambiguous and the experience of space can become that of a labyrinth.

If the museum has a *garden*, it can also be involved in the exhibition route and create an open-air exhibition of machines or sculptures. Finally, there are *open air museums,* where the landscape is part of the experience. Sometimes museums are "places of contradiction".

> „In some museums, architecture and interpretation seem almost oppositional. Nordiska Museet in Stockholm possesses a sublime and imposing cathedral-like architecture which now seems at odds with the museum's strongly humanistic interpretation. Today, the balcony-like exhibition galleries are visually separated from the museum's great - and largely empty - central hall."
> (Dodds et al., 2012, p. 23.
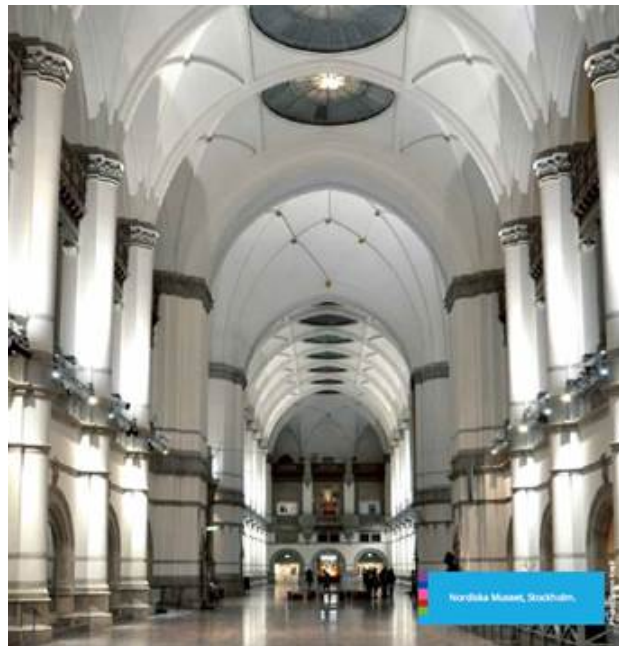
5.21. picture: Nordiska Museet – illustration for the quotation above. (Source: Dodd, Jocelyn, Jones, Ceri, Sawyer, Andy, Tseliou, Maria (2012): Voices from the Museum. Qualitative Research Conducted in Europe's National Museums. EuNaMus Report No. 6, Linköping University Electronic Press, p. 24.)

5.22. picture: Interactive models of machines made of wood are in harmony with the wooden structure of this ex-hibition site. (Photo: Tamás Vásárhelyi)

5.23. picture: An easy-to-realise, still much preferred by visitors interactive installation type is the water-powered machine. Here, a model of the Screw of Archimedes is put to use to upraise water from a creek near the museum building. The museum environment is utilised here to create a very natural and effective installation. (Photo: Tamás Vásárhelyi)

Task 1:

Invite a friend to solve this task! (Offer a beer for his or her time, and choose someone whose mindset is similar to yours.)

Your mission is to create an exhibition space in a barn of about 30 square metres for an alternative cultural festival organised in a small village. Choose a theme that you feel is appropriate for such an unusual venue and occasion, design the installation and other furniture (for example, chairs for resting in the gallery space or a table for selling souvenirs and publications). What sort of cultural event will you organise for the opening? A performance, a concert, a lecture or something else?

Now invite another friend, very different from your first planning partner in taste and other personal characteristics, and discuss the development of the display based on the theme you have chosen for the same venue and occasion (the barn and the village festival). Don't tell him or her about your previous planning game.

When both plans are done, compare them and also the two planning processes. Are both exhibition designs suitable for the theme? Did you gain new insights through working with two different people on the same display?

5.2. How to create a visitor-friendly exhibition?

(Andrea Kárpáti)

> National museums cannot control the changing political meaning and psychological impact of historical objects; they are, nevertheless, aware of the political resonances of the objects they "objectively" put on display. In the National Museum of Scotland, the Declaration of Arbroath greets every visitor who enters the medieval section of the museum. A declaration of Scottish independence prepared in 1320, it converted the Pope to the Scottish cause of freedom against the English Norman king Edward II. When the then Museum of Scotland first opened in 1998, an independent Scotland seemed unlikely, but in 2012, its meaning is rather different. The Declaration is no longer just a reminder of Scotland's proud past but a rallying cry for twenty-first century independence from the United Kingdom. The past again has political resonance; it is not neutral, academic or abstract. As long as only one hundred of us remain alive we will never on any condition be brought under English rule. National Museum of Scotland, Edinburgh." (Dodds et al., 2012, p. 26.)

5.24. picture: "Are museums political?" – an intriguing question for visitors at the entrance of the Getty Art Institute in May 2013. Similar posters throughout make visitors reflect on the functions of the museum. (Photo: Andrea Kárpáti)

Museums are no longer ivory towers where relics of distant ages are safely kept. They are part of a changing social context that they have to respond to, or become obsolete. Interpretive planning means not just exhibiting but also explaining objects in a display. The essence of the planning process is to make visitors understand the meaning and significance of the items presented, and return home with new knowledge, not just experiences. Interpretive planning is not easy if you have no clear idea about the aspirations and background of your visitors. Curators and exhibition developers often have an optimistic view about their prospective visitors: they hope these are eager to learn, open to see novel and unexpected sights, enjoy challenges and have plenty of time to get acquainted with the text on labels and information panels. In fact, visitors have a variety of different objectives when entering museum gates, and, accordingly, different amounts of time to experience at least a part of what is on offer.

 "The real journey is not the discovery of new landscapes but the novel way we observe well-known scenes." John H. Falk starts his essay "Identity and the visitor experience" (2009) with this quotation from Marcel Proust. Falk identifies five key types of museum visitors which we will summarize below. These are not personal qualities but roles that characterise visitor expectations. Even one visitor may exhibit characteristics of a different type when coming to a different collection with a different mood and mindset.

1. *Explorers*: they are curious about museums and visit them because of interest. They are well-read but not experts, who mostly enjoy looking at new acquisitions or works in art styles they have never heard about before. They are comfortable with going around on their own, but are keen readers of labels and information consoles.

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2.   *Facilitators*: they come to visit with friends and family whom they will guide through the connections. Some of them are parents or grandparents, others are socialisers. Parents are interested in enrichment programmes, informal learning opportunities for their children, and want to know the details and prices of these. Socialisers come with another adult (spouse, friend, relative) and will walk through the galleries chatting, barely looking at the objects.

3.   *Experience Seekers*: they are the "been there – done that" type of people who do not want to be left out. They want to have fun and see new things, but have no deep knowledge-seeking interests. Most of them are not too frequent museum visitors because the exhibitions normally do not satisfy their need for adventure.

4.   *Professionals/Hobbyists*: they are a small but influential group that includes museum staff, collectors, teachers, artists, policy makers and science communicators. Their visit is strictly professional: they know what they are looking for and will view the parts of the exhibition that are useful for their new project. These people are often Friends of Museums and are interested in special late-night openings, gallery talks and exhibition-related excursions.

5.   *Rechargers*: they need rest and inspiration, want to get away from their busy world and expect to find a quiet place full of interesting ideas in the museum. They enjoy social gathering places, like to linger in cafés and sculpture gardens, and pay little attention to the works exhibited.

Falk postulates that all these needs are related to the personalities of the visitor and will profoundly influence their encounter with the exhibitions. If museum staff helps visitors satisfy their needs, they are more likely to come back with a more open to new experiences mindset. Visitors return (or come for the first time) only if they feel that the museum will satisfy their identity related needs. If you know your visitors, you can plan around their expectations and predictable wishes and needs. (Duplessis, 2011)

Falk's essay helps us understand one of the key components of the mission of museums: to serve Falk postulates that all these needs are related to the personalities of the visitor and will profoundly influence their encounter with the exhibitions. If museum staff help visitors satisfy their needs, they are more likely to come back with a mindset more open to new experiences. Visitors return (or come for the first time) only if they feel that the museum will satisfy their identity-related needs. If you know your visitors, you can plan around their expectations and predictable wishes and needs. (Duplessis, 2011)

Falk's essay helps us understand one of the key components of the mission of museums: to serve their public. Research into identity-fulfilment indicates that visitors come to the displays with an agenda about the realisation of their self-concepts (for example, being a good parent, an erudite professional or a fun-loving friend). Many people want to find reinforcement of their *value as experts* in an area, and, if they can interact with museum staff (or at least with a well-constructed computer application), they feel they have contributed to the knowledge of their community. Others want to see themselves as *creative individuals* and are happy if they can actually make something during or after the visit. Many museum guides are volunteers, who come and offer their time and effort because they *like to be useful*, enjoy helping others and find personal fulfilment in volunteering. All these needs can be met by a *crowdsourced exhibition* (cf. Simon, 2010, Chapter 1) where visitors contribute with objects owned or made by them that are exhibited, or share narratives that potentially enrich the experience of others.

5.25. picture: The video in this showcase storage room shows how objects made of paper (books, letters, etc.) are restored. Visitors may experiment with this process and other techniques for conservation and restoration, using the tools available on tables in the space. In this way, visitors may have a better idea about the efforts museum staff invests in keeping objects collected in good shape. Szentendre Open Air Museum, Showcase Storage, 2013. (Photo: Andrea Kárpáti)

Duplessis (2011) emphasizes that the museum visitor experience is neither about the museum nor the visitor but it is about the unique moment when both of these realities become one and the same.

– "Visitors are the Museum and the Museum is the Visitor.

– Need to think of museums and content not as fixed and stable entities but as intellectual resources capable of being experienced and used in different ways for multiple purposes.

– Need to stop thinking about visitors as definable by some permanent quality or attribute such as age, gender or race – instead need to appreciate that every visitor is a unique individual and each is capable of having a wide range of very different kinds of visitor experiences.

– RESULT – a model of the museum visitor experience that is framed around visitors identity related visitor motivations – the series of specific reasons that visitors use to justify, as well as organize their visit and use in order to make sense of their museum experience.

What is identity?Speaks to how others see us, as well as how we think about ourselves. Humans don't have one single permanent identity – we use an ever changing set of identities to fit particular situations. Often unconsciously done – you sift through leisure options that will meet your needs and if a museum is a good fit – that is what will be chosen. Feels it is not only a descriptive framework but a predictive model that we can use to anticipate who will visit a museum, what they do there and what long-term meanings they make of their experience long after their visit. There is a lot of competition for leisure activities – if museums are going to keep their current popularity and success – they will have to get better at understanding and serving the visitor. His research showed that most leisure experiences aren't initiated by a desire to see or do something specific but as a desire to fulfil a specific identity related motivation." (Duplessis, 2011, p. 1.)

Interpretive planning means an integration of scientific and communication aspects. Bigger museums have special groups or departments for visitor relations and groups of explainers who review the plans and suggest modifications with different target groups in mind. The steps of an interpretive exhibition design are listed below (Spencer, 2001):

– Interpretation of the scientific message of the exhibition and formulation of messages;

– Definition of visitor groups;

– Interpretation plan;

– Communication plan (information transmission devices, programmes, publications, media exposure etc.)

– Visitor routes: planning and modelling

– Multimedia elements: selection and planning

– Marketing plan

– Evaluation plan with suggestions for adaptation / modification phases
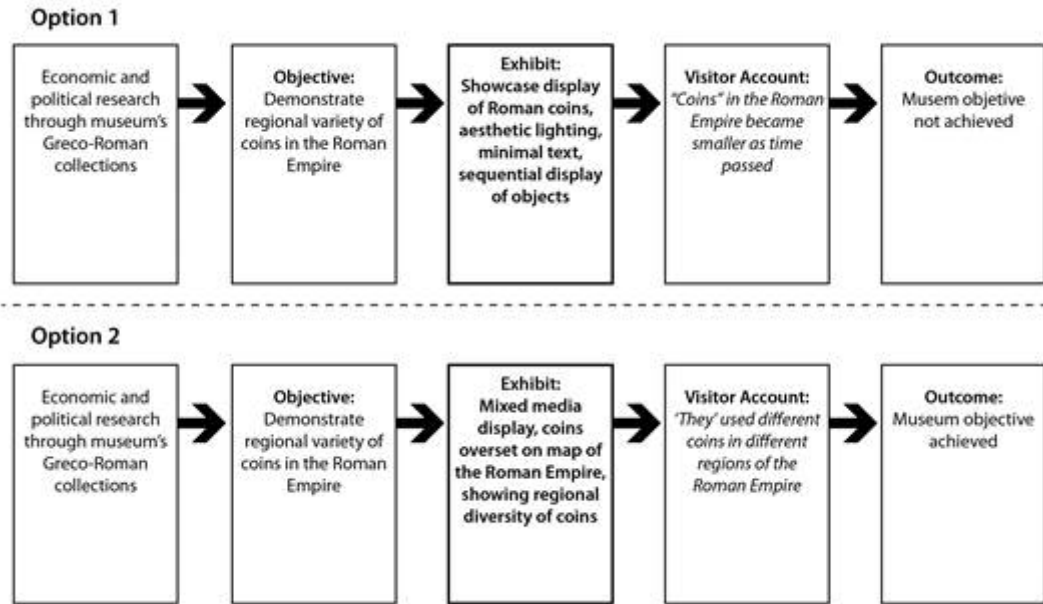
– Sustainability plan.

We summarise some of the phases of interpretive planning below.

Interpretation of the scientific message of the exhibition and formulation of messages

This phase is the most important component of the interpretive planning model. According to the intentions of the curator, exhibition developers and communication specialists select the objects or parts of the installation that they intend to highlight for different visitor groups. They also decide about the messages they want to transmit and ways that seem to be best for dissemination. For an art exhibition, messages related to the history of art and aesthetics may be associated with sociocultural ideas or results of cultural anthropology and thus relate the exhibition to contemporary visitor experiences.

An example from design: an exhibition about an important period in the history of fashion regularly includes information about the places of origin of the motifs and materials that designers use, the biological or social connotations of the designs and changes in meaning of materials and cuts during the years a certain model has been produced. Another example from science: an exhibition about recent results of gene modification technology naturally involves artistic reactions of the much discussed subject and results in film shows and debates being organised or art objects being placed among exhibits documenting scientific research.

For most of the exhibition content there are several communication options. However, installations that are clear and informative for an expert may not have the desired impact on a layperson. Not only the sequence of information provided but also the type of visualisation and the arrangement of objects in relation to explanatory images and text has to be considered by exhibition developers. They all convey meaning – and this is not always the same as the curator hoped to obtain.

Option 1

| Economic and political research through museum's Greco-Roman collections | → | Objective: Demonstrate regional variety of coins in the Roman Empire | → | Exhibit: Showcase display of Roman coins, aesthetic lighting, minimal text, sequential display of objects | → | Visitor Account: "Coins" in the Roman Empire became smaller as time passed | → | Outcome: Musem objetive not achieved |

Option 2

| Economic and political research through museum's Greco-Roman collections | → | Objective: Demonstrate regional variety of coins in the Roman Empire | → | Exhibit: Mixed media display, coins overset on map of the Roman Empire, showing regional diversity of coins | → | Visitor Account: 'They' used different coins in different regions of the Roman Empire | → | Outcome: Museum objective achieved |

5.1. graph: Examples of good and bad museum communication (Source: Spencer, 2001, p. 375.)

In museums that commemorate the life and work of an artist or researcher, a significant part of the exhibition is the presentation of the time period the master was active. Here, interesting parallels and connotations may be revealed and the oeuvre enriched with works of art, everyday items, memorabilia and explanatory text and images showing influential journeys or encounters that had an effect on the work of the person in the focus of the exhibition. Personal objects may be moving to look at in isolation, but if shown while in use, they are much more exciting. (An example: a presentation of the travels of Hans Christian Andersen in a diorama showing his suitcase, looking glass and a map of his extensive trips enchants visitors who have read his tales about distant lands).

5.26. picture: History depicted through images and things: Contemporaries of Andersen in the house where he was born. Lyngby, Andersen Museum, 2012. (Photo: Andrea Kárpáti)

When some concepts and artists' names are selected as highlights for a display, their arrangement is always a difficult design problem to solve. To include them in labels and *infosheets* means we are (over-optimistically) hopeful that they will be duly read. To leave it for the catalogue to convey these important messages means the exclusion of the majority of visitors who never purchase one. At Tate Modern in London, visitors cannot escape the names of styles, artists, important geographical locations and basic concepts related to an exhibit because it is written on the corridor walls leading to the exhibition they are about to see.

5.27. picture: Names of styles, artists, important geographical locations and concepts related to an exhibit on the walls of Tate Modern, London, 2012. (Photo: Andrea Kárpáti)

Definition of visitor groups, development of the interpretation plan

Making museums relevant is one of the biggest challenges of exhibition development. When defining visitor groups, we formulate a variety of messages (based on the main ones the curator of the exhibition developed when the display was planned) that our visitors will understand and appreciate. The interpretation plan is about getting the main ideas across through their connection to issues that visitors are aware of and find important.

> "The main challenge seems now to be the move from 'dialogue events' to a dialogue culture. It is essential that dialogue is intended by the parties concerned not just as a new umbrella to reproduce the usual strategies, but as a concrete means of obtaining new results. That is, as a pathway to provoke a social and political change, however small. This implies a shift in focus from the *methodologies* of dialogue to its *objectives*. Science centres are indeed among the better placed institutions to achieve this. But they have still not exploited this opportunity fully. Let's ask ourselves two questions. First: are science centres today the first place citizens think to go, when they want their voices to be heard on controversial issues involving scientific expertise? The answer, for the most part, is still no: science centres do organise exhibitions and events on controversial issues, from GMOs to vaccines to nanotechnology, but are very seldom *used* by pressure groups of citizens, watchdogs, whistle blowers or advocates of demand-driven research as a platform to actively defend their issues and reach their objectives. Second: are science centres today the first place scientists think to go, when they want to defend their viewpoints, to lobby, or to stage the competition among themselves for cultural and financial recognition? The answer, again, for the most part, is mostly no: science centres do organise debates on front-end current research, but have mostly failed to convince scientists to *use* them as a public stage on which, for example, to advocate for investment for the ITER reactor rather than for energy saving domestic appliances, or for string theory rather than loop quantum gravity research. These functions, essential for a dialogue to occur, are still mainly covered by the mass media, where the battles among scientific institutions for coverage and recognition are widely experienced by any science journalist." (ECSITE, 2008, p. 3.).
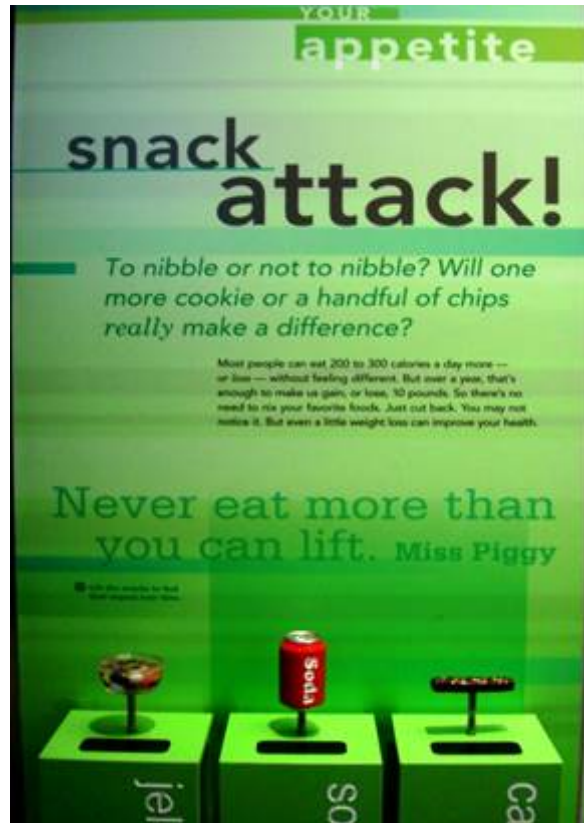
5.28. picture: „Snack attack!” Three lifting weights indicate the amount of snacks and soda drinks an average teenager consumes during a year. The task: lifting what we have swallowed. YOU – The Experience exhibition, 2009, Museum of Natural History, Chicago. (Photo: Andrea Kárpáti)

Every exhibition has its own visitor group that is likely to find its content motivating enough to consider a visit. This group has to be targeted when interpretation decisions are made, while other potential visitor groups should be involved, too, with a less intensive strategy. In the Museum of Natural History[1] in Chicago, an exhibition entitled „YOU – The Experience” (2009) was organised to tell teenagers about their body and the ways it is used and abused. The exhibition (briefly discussed in Chapter 3 above), was meant for 14-18-year-olds and showed current research results about the synergy of body and mind, and the functioning of organs under normal circumstances and in exceptional situations. It explained how diet, exercise or drugs affect our health and, through interactive exhibits, called attention to other serious issues related to our body that teenagers rarely learn about, in order that they could take them seriously.

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[1] Chicago, Science Museum, „YOU – The Experience” exhibition, September 2009 – February 2010. Info booklet for students and teachers.

5.29. picture: Visitor information collection device that targets advertisements of junk food. The device collects votes about a series of related topics. Visitors push buttons to vote and may read longer info texts or debate with fellow visitors sitting around the same falt screen. YOU - The Experience, temporary exhibition, 2009, Museum of Natural History, Chicago. (Photo: Andrea Kárpáti)

The exhibition developers of „YOU – The Experience" used interactive installations because their audience has a preference for them. They offered young visitors chances to express themselves and to find out exciting new things about themselves through the solution of psychological tests or medical examination tasks. All these *edutainment* solutions (discussed in more detail in Chapter 7) transmitted serious knowledge in a way not only teenagers but also their younger siblings and parents could understand – on different levels, of course. The exhibition employed unusual tour guides (nurses and doctors, consumer research specialists and food experts, for example) who offered insider information on topics much discussed in the home and the classroom. The attractive exhibits as well as the scientific accuracy of explanations made the exhibition a blockbuster hit – a rare achievement in the area of science communication in museums.

Targeting interest groups that span several age groups is a difficult planning issue that museum educators have to face when organising guided tours in a permanent exhibition and wishing to avoid the usual "walk through the ages" approach. In Tate Britain,[2] London, where visitors can enjoy an overview of different periods of art history, represented by masterpieces, a small and colourful series of booklets comes to sight: *For Nature Lovers*, *For Gardeners*, *For Dog Keepers*, *For Travellers* … to mention only a few of these thematic mini-guides that help visitors devoted to a hobby or entertaining an emotion find paintings and sculpture of particular interest while walking through the halls, and surely stopping by other works of art as well. One of the pocketbooks, *For Lovers*, shows how this theme captured the imagination of likeminded artists. One may consider a thematic type of walk-through superfluous. However, this is a first encounter only, – when enjoyable, it will be followed by many more serious visits. For many people with less knowledge about art, the experience that connects their own hobby with a work of art is surely more intense than an endless procession through the halls, full of images with unfamiliar style and content.

[2]Tate Britain, London: Exhibition leaflets.

Realisation of the interpretive plan

An exhibition plan based on the interpretive model should involve developing the following publications:

– Scientific publications (catalogues and research papers);

– Popular information about the exhibition (family guide, activity booklet, leaflet etc.);

– Media reports;

– Information in the exhibition: labels, banners, panels and charts;

– Audio guides;

– Sound effects and music in the halls;

– Multimedia information boxes;

– Exhibition home page and related internet sites;

– Regular guided tours (with museum staff), tours with different types of guides (with artists, experts, representatives of different professions related to the display, local stakeholders, etc.)

– Cultural events during the exhibition: research conference, gallery talks, film shows, theatre performances, etc.;

– Educational events during the show: activities for schools, families, individual visitors;

– Evaluation devices (methods of collecting visitors' responses).
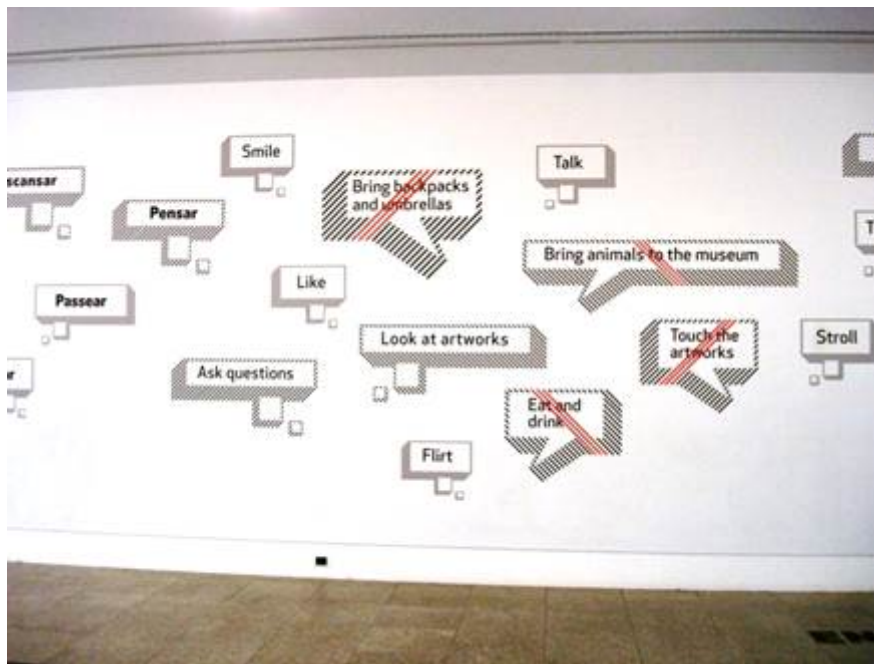
5.30. picture: Words indicating desirable and undesirable visitor behaviour – a work of art that reflects on visitor management in museums at the Modern Art Museum in Lisbon, 2011. (Photo: Andrea Kárpáti)

We have already discussed major exhibition communication features influencing visitor motivation and experience. Here we want to emphasize again that every element of the exhibition has to be in harmony with the type of exhibition chosen and the visitor group(s) targeted. Also, the number of explanation devices depends on the type of display we organise. If it is a research-related science communication event, we need much more information material than in an art show, where the works are supposed to speak for themselves.

5.31. picture: Showing nature "in vivo" and "in vitro": two types of installations for the same topic mutually reinforce each other. 2009. Rockford , Illinois, USA, Burpee Museum of Natural History. (Photo: Andrea Kárpáti)

5.32. picture: A homogenous exhibition style includes all the components of the display, from material and form of installation to letter types and colours of posters. Design Museum, Madison, Wisconsin, USA. 2009. (Photo: Andrea Kárpáti)

Communication plan (information transmission devices, programmes, publications, media exposure etc.

When we design information materials, first a style sheet is produced that includes all major design decisions for the show and the information materials. The exhibition development book includes letter types and colours, typesetting formats, representative images and key words to be used, plus other images and text to be employed, including major messages as well as points of interest that the media may find worth mentioning. Contemporary exhibitions have a full "product line" of souvenirs that bear the motifs of the most famous works of art, the most peculiar science equipment or funniest animal exhibited. Traditional museum publications are mainly scientific, but the current trend is the opposite: comic booklets, colouring books and tales about artists are meant to convince young audiences

that museums are fun. In any case, decisions about the style and content of these supplementary materials – that will be, however, the only tangible remains of the display – should be designed in advance and in harmony with the intentions of the curator and other museum staff.[3]

Printed information materials available for visitors as "cognitive souvenirs" of the display:

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Printed information materials available for visitors as "cognitive souvenirs" of the display:

– 		*Exhibition leaflet:* illustrated, with a short overview, supplementary programme schedule and promotion material, usually free of charge;

– 	*Illustrated guide:* abridged version of the catalogue, richly illustrated, with popular introductory text to major works of the exhibition;

– 		*Info sheets* in the exhibition areas to take away or read and leave behind on site;

– 		*Task sheet or booklet* with a quiz or quest to be completed during the visit *(special* versions for kids with families, school groups and adults);

– 		*Teaching and visiting aids for teachers* that explain how to prepare for the exhibition at school, how to organise the visit and guide the students on site, and finally, how to obtain feedback about experiences and utilise new knowledge and experiences after the visit.

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[3] An excellent series of publications for young audiences: children's art books by the staff of the Metropolitan Museum of Art in New York.
[4] An excellent series of publications for young audiences: children's art books by the staff of the Metropolitan Museum of Art in New York.
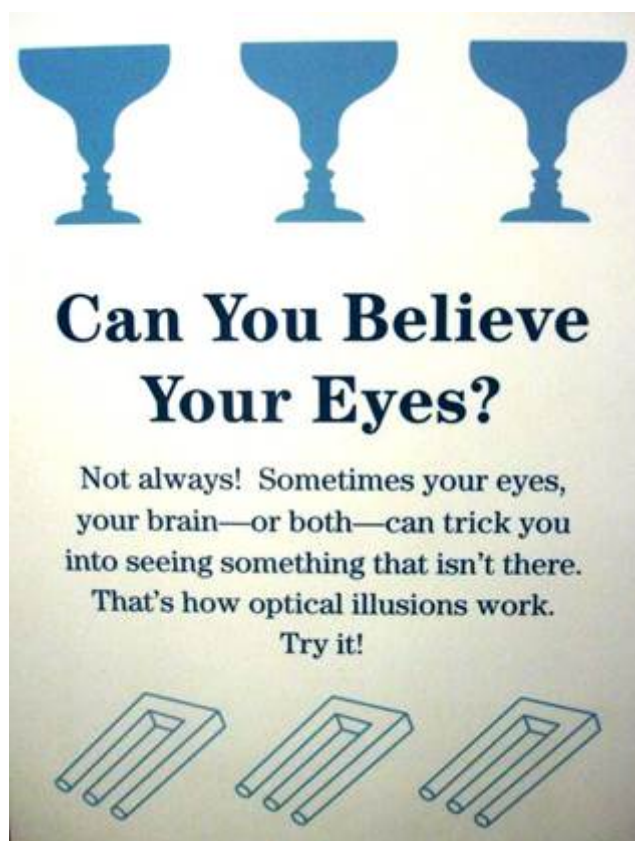
5.33. picture: A good example of an information panel: Demonstration of optical illusion with an inviting question in bold, large letters to lure young visitors to see the exhibit 2013. Children's Museum, New Orleans. (Photo: Andrea Kárpáti)

Visitor routes: planning and modelling

Indications of directions, arrows and diagrams highlighting major installations or the exit are important parts of exhibition design. These communication devices manage the visit and are responsible for a safe and enjoyable passage through the halls. Therefore, it is not only the curator and explainer who define their placement and text but also the security personnel and the fire-protection officer. At a blockbuster exhibition, it is impossible to wander around because other visitors define one's own route and the time to be spent in front of an installation. These routes are usually linear as visitors are part of a crowd moving slowly and deliberately through the halls in the sequence indicated by the signs and guards. Normally, however, the individual visitor may decide to view the exhibition in a „hypertext" manner, walking from one piece to another because of some information just read or previously noted urges him or her to change the „correct" sequence indicated in the map or short guide. These visiting sequences may turn into a tiring run through what seems to be a labyrinth of an endless series of similar halls and corridors with no orientation signs. If there are clear indications of place, visitors easily find their way back to track after having followed their own routes for a while.

5.34. picture: Nicely designed and easy to follow signs on the floor of the Showcase Storage of the Szentendre Open Air Museum. (Photo: Andrea Kárpáti)

5.35. picture: Orientation point at the Getty Art Institute in San Francisco, 2013. Major works exhibited are clearly indicated through their shadow images. (Photo: Andrea Kárpáti)

Multimedia elements: selection and planning

When planning visitor routes, we have to consider the placement of multimedia devices that are likely to attract large crowds. Their types and functions we will discuss later, in Chapter 7, here we only summarize some planning aspects that are related to different exhibition types and styles.

5.36. picture: Multimedia as work of art: its placement and accessibility has to be similar to other important works of the exhibition. Alberto Sampaio Museum, Guimarães, Portugal. 2008. (Photo: Andrea Kárpáti)

5.37. picture: Multimedia station. 2009. Heureka Science Centre, Helsinki. (Photo: Andrea Kárpáti)

Multimedia consoles are best when they resemble edutainment products and not the pages of the catalogue. However, when they are interactive they have to be placed in corners where they can be accessed easily and where they are also accessible for maintenance. Computer supported solutions will be discussed in Chapter 7, here we only give a list of their types.

Their major function is to strengthen the message of the exhibition through added information and interactive experiences. The diagram below shows steps of their planning and integration in the communication tools of the exhibition.
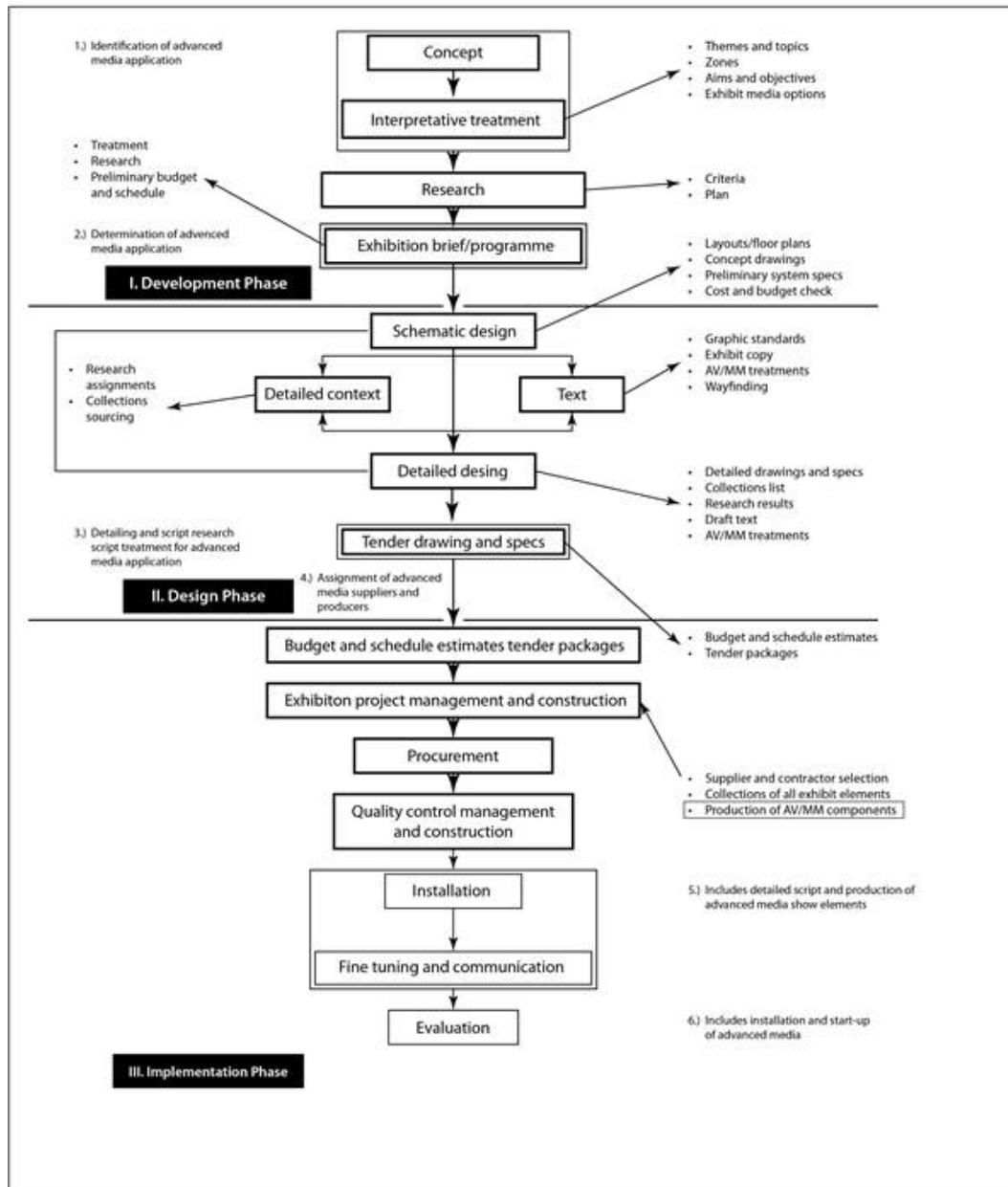
5.2. diagram: Planning multimedia applications for an exhibition. (After Van der Donckt és Callebaut, 2001, Graph 7.8., p. 255, adaptation by A. Kárpáti)

Exhibition multimedia types:

– *Soundscape* (special sound effects in one or several halls of the exhibition)[5];

– Audio guide;

– Interactive console;

– Film played on flat screens placed near or built inside an object;

– Animated map or diagram (e. g. led displays activated through push-buttons show information);

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[5]This video shows an example for location based sound streaming.

–   Virtual reality: events and persons animated through three-dimensional imaging (e. g. laser or holography);[6]

–   3D or IMAX film theatre (projection on a huge screen) in a special area of the museum;

–   A special vehicle with audio guide facilities takes visitors from one place to another. In some cases, visitors view the exhibits while sitting on a slowly moving vehicle;[7]

–   Simulation environment – for example, visitors are seated in a model car with screen projections of the landscape it runs through. The sounds and the shaking and swinging movement of the model contribute to the experience of motion.[8]

Developing a marketing plan

Every year the Museum Research Institute (*Institut für Museumforschung*) in Berlin[9] publishes developmental data of German public collections. The pace of growth is impressive and suggests an immense task of restoration and conservation, exhibition and interpretation. In other countries growth rates may be similar and so are the tasks – therefore, fundraising for their completion is a growing concern all over Europe. In a period of economic crisis, public collections cannot rely on government support only. Typically, a museum has to cover 35-40% of its expenses from the sale of entrance tickets, souvenirs, publications and renting facilities for events. The marketing plan of an exhibition includes the planning, production and sale of these "by-products".

This plan includes the definition of the main marketing ideas: issues of public concern that may be highlighted in the media, advertisement options for cultural products that can be associated with the exhibition, and events that the museum can organise to support the scientific message of the show and generate additional income at the same time. Sponsors who may be interested in associating their name with the exhibition also have to be identified in this plan. The placement of advertisements about the exhibition in different media channels (from a large canvas hanging from the museum wall to TV spots) has to be co-ordinated with other communication types relating to the exhibition (labels, information leaflets, etc.) All these ought to have the same visual interpretation and design style.

Evaluation plan with suggestions for adaptation / modification phases

This plan includes the assessment methods of the exhibition and the timing of their introduction. Here are some forms of evaluation to be used in museums:

1.   *Knowledge and attitudes analysis* before the planning of the exhibition to decide the quality of information needed for visitors to understand it;

2.   *Pilot study about the use of equipments* before the opening of the exhibition. It should be done at a time when interactive tools are already in place, and utilised to test their accessibility and detect functioning errors caused by intensive use;

3.   *Use and satisfaction surveys* during the exhibition to see how the exhibition is used and perceived;

4.   *Post-hoc knowledge and experience surveys* to observe the long-term effects of the exhibition.

Task 2:

Assess how much an exhibition is visitor-friendly!

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[6] An excellent example of the use of holography: the Abraham Lincoln Presidential Library and Museum in Springfield, Illinois, USA. The president and his associates and family members are shown in authentic environments through holographic images.
[7] In Los Angeles, at the EPCOT Theme Park, visitors explore new inventions while seated on a small electric train. At the Scotch Whisky Experience Heritage Centre in Edinburgh a moving walkway takes visitors around the workshops showing phases of the production of the drink.
[8] New imaging technology may be experimented with at the Parc du Futuroscope in Poitiers, France.
[9] Home page section of the *Institut für Museumforschung*, Berlin, with research studies and information about ongoing surveys: http://www.smb.museum/ifm/

You may choose an exhibition you have seen before that needs no or only little alteration, or one that should be profoundly redesigned. Visit the display again, and evaluate it assuming the points of view of visitors described in the table below. How much would they agree with the statements? (Scores: 5 = agree completely, 1 = do not agree at al).

Visitor opinion	Family with small child	Persons with motor disability	Old tourist couple
The exhibition is overwhelming.			
Every part of it is easy to access.			
We understand the messages of the show.			
Every object can be seen adequately.			
Labels are readable and easy to understand.			
Information devices are easy to handle.			
Information materials on sale seem to be interesting and may contribute to my experience.			

Task 3:

Same collection – different interpretations

You surely have made a lot of photographs during your last tourist trip. Please compile two sets of 20 pictures – one for a travel agency to popularise the place you have visited, showing that it is a quiet venue where everyone can come and feel safe, and another set for the police to warn tourists about dangers in this neighbourhood.

You may use labels and make montages, too, but you have to create both displays using exactly the same collection of photographs. This task is about producing exhibitions of different meaning out of the same museum storage!

Show both sets of images to your fellow travellers and discuss the meaning of verbal and visual communication and interpretation options of the same experiences.

Task 4:

Advertising an exhibition

In the cinema you frequent, there is a small exhibition room where your friends have decided to organise a show display about their common hobby. This hobby is interesting, but not particularly well-known. Design a small advertising campaign for the exhibition!

– Write a short and catchy text of 10-15 lines about the hobby and how it can be show presented in an exhibition!

– Choose a few objects to be shown in a glass case at the entrance, near the exhibition room!

– Design a large canvas that will be hung above the name of the cinema, to advertise the display.

Ask your friends if they would consider visiting the show display before or after a film screening!

Further reading

Audience research blog on Museum 3.0: book reviews, conference announcements, research reports on visitor studies. http://museum30.ning.com/group/audienceresearch

Dodd, Jocelyn, Jones, Ceri, Sawyer, Andy, Tseliou, Maria (2012): Voices from the Museum. Qualitative Research Conducted in Europe's National Museums. EuNaMus Report No. 6, Linköping University Electronic Press

Duplessis, Antoinette (2011): The Five Minute Falk. A very brief explanation of John Falk's Visitor Identity Related Motivations. Conference presentation. iMuseum Symposium Proceedings, Toronto, 24-25 March, 2011. Full congress book available here: http://www.museumsontario.com/en/Handbooks_&_Reports_37/iMuseum_Proceedings_1863.html

ECSITE (2008): Talking the Talk: Dialogue. *ECSITE Newsletter*, 2008, Spring, Issue 74

Falk, John (2009). *Identity and the museum visitor experience*. Left Coast Press, Walnut Creek, CA

Hein, George (2005). A Progressive Education Perspective on Evaluation. In: B. S. Engel and A. C. Martin Eds.: *Holding Values. What We Mean by Progressive Education*, Heinemann, Portsmouth, NH. 176-181. old.

Spencer, H. A. (2001). Interpretive Planning. In: In: Lord, B. és Lord Dexter, G. (2001). *The Manual of Museum Exhibitions.* Alta Mira Press, Walnut Creek, CA, 373-392. old.

Simon, Nina (2010). *The Participatory Museum*. Museum 2.0, Santa Cruz, CA. Full text available here: http://www.participatorymuseum.org

Chapter 6. Museum communication channels and visitor management

(Tamás Vásárhelyi)

Museum communication occurs through a variety of channels. In this chapter, we introduce some of them. The venue influences the mood of the visit, gives first impressions and defines the framework of interpretation: leisurely or scholarly, experience-based or science-driven. The message of the exhibition is not transmitted through works of art or objects of scientific significance only. The lights and colours, voices and smells, the installation and other items of museum furniture, the texts and images presented on boards or offered for free browsing through digital information kiosks substantially contribute to our understanding of the display. Guides and guards are also among the most important contributors to visitor experience, as are services like restaurants or souvenir shops, access for handicapped visitors, senior citizens or families with small children. All these factors influence the duration and quality of our visit and our motivation to return. In this chapter, we describe these aspects and show their significance for museum communication.

6.1. picture: Communicating the Museum – posters of an annual international conference series. The buzzwords: "The museum and you", media and marketing.

6.1. The venue

Museum visits are inspired by expectations of learning and (or?) experiencing. The venue where the exhibition is held influences our beliefs about what to expect, especially if we enter a new place about which we have only read or heard about. Even if the exhibitions are the same, the building and its environment raise different expectations. For example, you plan to visit our most important national museum, the biggest in our capital city, where we were first taken in primary school, and regularly revisit because of its unquestionable authenticity and 19th-century splendour. You are impressed even before entering the gate through the huge columns of its portico, but not excited – you know what to expect and are prepared for a solemn encounter with distinguished scholarship. If a colleague suggests visiting a university collection, and seeing an exhibition with the same title, your expectations are likely to be lower, or different. You pass through the corridors of the block-shaped building and, quite unexpectedly, enter a 19th-century collection kept in the same wooden installation as it was first shown two centuries before. Your surprise is mixed with respect for the historic roots of the institution and the excitement of finding a hidden treasure. Another example: if you have travelled far and made considerable expense to see a country, a visit to its national museum seems to be a "compulsory" part of the trip. Here, the environment is decisive. Experiencing a

country in economic crisis and looking at its treasures from a glorious historic period of the nation probably makes you reconsider your ideas about the land you are visiting. The three exhibitions may be exactly the same, but your mood and motivation are different and so is the resulting experience.

6.2. picture: Two museums side by side, with an entirely different style and atmosphere: Jüdisches Museum and Stadtmuseum, Munich, Germany. We enter them with entirely different expectations, past experiences and memories. (Photos: Tamás Vásárhelyi)

6.2. Before entering the museum

6.3. picture: The Imperial War Museum, Manchester. With its size, the building provides the impression of extraordinary power. The visitor feels overwhelmed, similarly to the first experiences of a citizen in a country entering a war. (Photo: Tamás Vásárhelyi)

6.4. picture: Banners of the Science Museum, London, invite exploration and raise curiosity. (Photo: Tamás Vásárhelyi)

Our assumptions about an exhibition we are about to visit are also shaped by the way we have learnt about it. We may be informed about the display by an advertisement or the emphatic account of a friend or colleague. In the second case, our expectations are higher. If an exhibition is being advertised all over the city and the media, we are inclined to go and see and take part in the apparently important experience. The museum should wet our appetite if it wants us to rush in hungry.

Falk and Dierking (2000) describe the museum experience as a place for contextual learning. They presume that the learning process is influenced by three factors:

– The *personal context*: gender, age, education and previous experiences of the visitor.

– The *social context*: our relationship to other people suggesting that we go or accompanying us during the visit: our partner, some family members, casual acquaintances in a tourist group, complete strangers who came for the same guided tour, etc. The museum staff: guides, guards, explainers, lecturers – they also contribute to this context.

– The *physical context*: the building with its information system and the exhibition with its visual effects and verbal communication.

6.5. picture: An example about the importance of the social context: during the Night of the Museums, even adults are happy to take part in quests and quizzes. During a regular, daytime visit, they would rarely consider sitting down to play. (Photo: Tamás Vásárhelyi)

This documentary video produced for this book gives you an impression about the atmosphere of the museums during irregular cultural events and educational programmes.

6.6. picture: Another example of the importance of social context: different expectations are raised if we enter a huge, empty hall rather than joining others in a busy reception area. (Photo: Tamás Vásárhelyi)

6.7. picture: If we cannot get close enough to an installation, the guide will lose our attention; we wander off, chat or look at other things. (Photo: Tamás Vásárhelyi)

6.8. picture: A rare moment: the museum guide manages to capture the attention of the whole group. Her secret: she asked them to form a circle, so that she could maintain eye contact. (Photo: Tamás Vásárhelyi)

The *personal context* has little to do with the exhibition. Museum staff may influence this aspect through positioning the institution in society, through making it relevant for as many potential visitors as possible. The *social context* is an interaction between visitor expectations and previous experiences and the intellectual and emotional offerings of the museum staff. The *physical context* is the product of the institution. The building has a clear message which the exhibition may reinforce or oppose. (In Chapter 2 we explained how museum buildings "work".) Visitor routes through the halls are also spiritual journeys that are guided by different communication channels. However, it would be a mistake to concentrate on this last aspect only, as all three components of the visitor experience are interrelated.

6.9. picture: The visitor who encounters this handwritten note, saying "Please call this number upon arrival!", will expect an informal, friendly atmosphere in the small memorial museum. (Photo: Tamás Vásárhelyi)

6.10. picture: Colour-coded road signs in three languages at the Szentendre Open Air Museum (Skanzen). (Photo: Tamás Vásárhelyi)

6.11. picture: A well-designed sign system leads us safely to our destination at the Szentendre Open Air Museum (Skanzen). (Photo: Tamás Vásárhelyi)

6.3. Arrival at the exhibition

When describing an exhibition environment, we have the following features to consider:

– Light and darkness,

– Colours,

– Textures,

– Shapes,

– Visual balance,

– Organisation of space (linear, central, undivided, compartmentalised, etc.)

Many of these features influence the first impression we have right after entering an exhibition. These impressions are decisive – they influence the whole course of the visit and define the perception process of the exhibition. There are obvious elements of exhibition communication (for example, light effects and colours, to be discussed later),

and others that visitors may not even notice but are still important factors of their experience (visual balance, clear or confused exhibition structure).

6.12. picture: Is this really the exhibition that we came to visit? The panel has no text and its number, 06, suggests it is not the beginning installation. The visitor is confused. (Photo: Tamás Vásárhelyi)

6.13. picture: This picture was taken in the same museum as the previous one. ",,Watch out! Study exhibition!" *– the note on the floor suggests that we have arrived at an unusual display, and should stop wondering why we see no instructions about the beginning of the exhibition. (Photo: Tamás Vásárhelyi)*

Movement is an important element of the museum visit. In a theatre, the audience sits still, while the actors move around on the stage. In a museum, objects exhibited are (in most cases) firmly attached to their stands or the floor, or are locked up in their showcases, and it is the visitor who moves around them. In most cases, movement is restricted and influenced by other visitors, as well as by looking for the best angle to view an installation. The museum experience as movement is characterised by a flexible adaptation to routes predefined by exhibition developers, our own intentions to see certain objects and the fuzzy logic of the motion of other viewers.

6.14. picture: If there is a crowd, viewing an exhibition involves a lot of compromises. Special events like the Night of Museums (when this picture was taken) attract a large number of people to the Hungarian Natural History Museum. (Photo: Tamás Vásárhelyi)

6.4. Lights

Mayrand (summarised by Lord and Lord, 2002, p. 411), identifies three functions of light at a museum exhibition:

–   It makes the objects clearly visible;

–   It creates contrasts and makes colours more vivid;

–   It recreates the environment through special emphasis of certain parts of the architectural space.

Using natural light is a truly nature-friendly idea – it saves energy and it is better for our eyes, too. However, it also creates several problems in relation to making an exhibition sustainable. In broad daylight, sunshine is so intense that is damages objects made of organic materials and certain plastics.[1] The source of light also makes a difference. If the ceiling is constructed mainly of glass or any other transparent material, light coming from above creates an open-air atmosphere. If it is the centre of the room that lights focus on, objects in corners or near the walls remain obscure or are completely hidden in the shadow. By the time our eyes accommodate to the light contrast and recognise the objects in the shade, we may have already left this hall. Even if we have a powerful light source, we must cater for artificial light to compensate for the loss of sunshine every afternoon or even in the morning on cloudy days. With global warming, using natural light is no longer viable because intensive sunrays damage the exhibits. Sunrays must be blocked by UV filters and the temperature also has to be regulated.

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[1]Contemporary museums pay attention to light damage much more than was customary before. As a result, visitors often complain about dimly lit exhibition halls.

6.15. picture: An example of unsuccessful light effects: information panels describing the exhibition remain in the shade while lamps provide unnecessary extra lightning on the wall, facing a series of large windows. (Photo: Tamás Vásárhelyi)

Artificial light is a flexible device: it can be used for the whole exhibition space, a showcase, a group of objects in the case or one single object only. Like a high stand, a spotlight provides a strong emphasis that indicates the importance of the object for the display. A simple row of lamps is cheap, but it radiates boredom, not just light. Some light bulbs are too strong to use, their UV radiation creates much damage, although their effect is dramatic. Fortunately, exhibition lightning is a growing industry, and we have an increasingly appropriate selection of devices to choose from.

6.16. picture: In the Bakony Museum in Zirc, Hungary, a recently discovered mammoth skeleton is enhanced with exciting light effects. (Photo: Tamás Vásárhelyi)

Lamps have connecting cables that may spoil the overall effect of an exhibition, although visitors do not pay much attention to them. If the use of lamps is inevitable in an installation and they cannot be hidden or placed above the viewing level, they should have a modest shape and colour, in order not to steal the show from the real exhibits.

6.17. picture: This exhibition is placed in a large space which is divided into walking paths. For technical reasons, the lights could not support this arrangement; they could not be placed in the installations. The lamps on the

ceiling create no special emphasis; they cover the whole space with sparse, dim light. Labels and information panels are equally grey with nothing being highlighted. (Photo: Tamás Vásárhelyi)

6.18. picture: The exhibition hall is dark, the brightly lit niches containing the exhibits are in sharp contrast with the other parts of the hall. This light effect provides a strong accent and increases our appreciation for the objects presented. Hungarian Museum of Ethnography, ",,What are Finnish people like?" – An exhibition about the contemporary material and spiritual cultural of Finland. (Photo: Tamás Vásárhelyi)

6.19. picture: Lamps positioned on top of the cupboards puts the whole installation within quotation marks. They indicate that we have not really entered an old pharmacy – this is only a reconstruction at the Semmelweis Museum of Medical History in Budapest. The effects are the same as in Picture 6.16. (Photo: Tamás Vásárhelyi)

Task 1

http://www.topschool.hu/3d-vitrin/

This simulation shows how light influences our vision and changes our perception of an object in a showcase.

This is how to handle the animation:

1) If you click on the head, the lights will be switched on / off. Options:

a) No light;

b) Three spotlights from above (right-centre-left);

c) Two spotlights from below (centre and front).

2) If you click on the Space button, the head starts rotating. Click again: it stops.

3) Clicking on the background changes its colour.

4) If you click on the light bulbs on the left, the colour of the spotlights will change.

5) If you click on the numbers on the left, the direction of the light will change.

6.5. Colours

The effect of colours on our mood, attention and imagination is well known. The colour scheme of an exhibition is influenced by a variety of factors. According to a Hungarian textbook on museology, (Korek, 1988), the use of bright colours in European museums is an overseas influence. Traditional museum walls used to be greyish white, light, yellowish brown, or a lighter shade of grey, and installation furniture was beige or grey. Museums and galleries today use a wide range of different colours although the use of white as a background that accentuates other hues is still dominant. Black installation cases or walls provide dramatic effects and are also used more often these days. Children obviously prefer vivid colours. The Children's Museum in New Orleans is housed in an old warehouse. Due to bright colouring and a creative division of space, the original function and atmosphere of the building has completely disappeared.

6.20. picture: In the Museum of the History of Technology in Florence, Italy, high, vaulted spaces are accentuated by colour and light effects. (Photos: Tamás Vásárhelyi)

6.21. picture: In the Royal Belgian Institute of Science, there is an installation of a dinosaur skeleton that changes colours through a projection device. A place of serious scholarship with a touch of playfulness! (Photos: Tamás Vásárhelyi)

6.22. picture: The two images present the same museum entrance hall during two different exhibitions. Light effects create a strikingly different atmosphere suitable for the two presentations of modern art. Tate Modern, London. (Photos: Tamás Vásárhelyi)

6.6. Furniture

Exhibition furniture is called *installation*. In a traditional display, objects may be placed directly on the wall, in which case no installation is necessary, or placed on or in front of folding screens. In most exhibitions a variety of open, semi-open or completely glass-walled showcases are used. Showcases may be mass produced or custom-made to suit the style and needs of an exhibition.

There are cases that are designed in line with the fashionable styles of a period, while others have an "antique" or else a rustic effect to blend in or contradict with the style of the museum building. Today installations are a major part of the attraction: a huge slab edifice or a computer-operated steel structure are equally valid ways of present-ation, if they suit the objects to be shown.

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6.23. picture: 20th century pine wood copy of a 19th century teak wood showcase. In the safely locked drawers, museum objects may be stored. Mátra Museum, Gyöngyös, Hungary. (Photo: Tamás Vásárhelyi)

6.24. picture: Minimalist furniture in the Showcase Storage of the Szentendre Open Air Museum, Hungary. (Photo: Tamás Vásárhelyi)

6.25. picture: In the Classicist building of the one-time High Court in Budapest, installations showing peasant utensils and folk art products have to be separated visually from the architectural space. They are placed on stands, in front of large, white panels with metal frames. In the showcase on the right, a large photograph shows the place of origin of the objects. (Photo: Tamás Vásárhelyi)

6.26. picture: The metal divisions of the showcase produce a disturbing effect. There are a lot of objects not connected to those exhibited (two large seals) but are too close to them for visitors to ignore: a coat rack, a fire extinguisher, and a bench – on which you can only sit with your back towards the exhibits. The whole arrangement suggests that the animals are not all that important. (Photo: Tamás Vásárhelyi)

6.7. Voices

The use of voices is not customary in museums. Audio effects are rarely used, if at all. With the appearance of interactive, computer supported applications, voices have become a viable component of exhibitions. Perhaps it is loud pop music forced on visitors of shopping malls (and driving some of them away) that prevents the organisers of exhibitions from involving our auditory organs in the museum experience. Music suited to the style and content of a display is, however, a welcome supplement that visitors generally appreciate. In some cases, using on-demand voice applications is important for in-depth appreciation. For example, if ancient or exotic music instruments are exhibited, we should demonstrate how they sound. It is a remarkable experience to hear how a bird whistles – a melody we have heard before, but do not know what kind of bird produces this delightful sound. In a history exhibition, hearing an eye-witness talk about an important event is striking.

In these cases, sound is as important as textual explanation, or even more so, because the result is an experience, not just a new piece of knowledge. Increased attention, longer lingering in a museum hall, deeper memories and richer associations are provided, if visual effects are supplemented by audio sensations.

6.6. Scents

We know only a few examples for applying scents in exhibitions, apart from commercial samples at trade shows and „Guess what this is!" tasks in science centres. At the Museum of History in Budapest, similar interactive installations are used. At the Hungarian Natural History Museum, in the diorama showing hunters-gatherers, the smell of a pile of mushrooms drying in front of a cave shelter contributed to the impressions about the life of our ancestors. Some visitors noticed this and remarked on the interesting addition to the effects of this exhibit.

6.27. picture: At the permanent exhibition of the Museum of History in Budapest, visitors have to recognise the smell of objects hidden in the boxes. After this, they can move the box to the picture of the medieval shopkeeper whose products might have had the same smell. (Photo: Tamás Vásárhelyi)

6.9. Texts

The quantity and style of texts integrated in the installations of an exhibition is a much-disputed issue. On the diagram below, relationships of objects and related pieces of information are represented. Dean (1994) shows two extremes: in one, there is little explanation; the exhibition is made up of objects only(An example of this type of presentation is the showcase storage, where, in many cases, objects are designated with their inventory number only. In private life, with the so-called "festive room" of peasant dwellings, the room that was only used on the most important days of life – childbirth, weddings and funerals – a similar presentation of a large number of objects is customary.) According to the other extreme, a lot of information is presented, with little to see and experience. The average exhibition is between these two poles and hopefully realises a synergy of information and objects. The essence of the exhibition has always been the presentation of things, not texts.
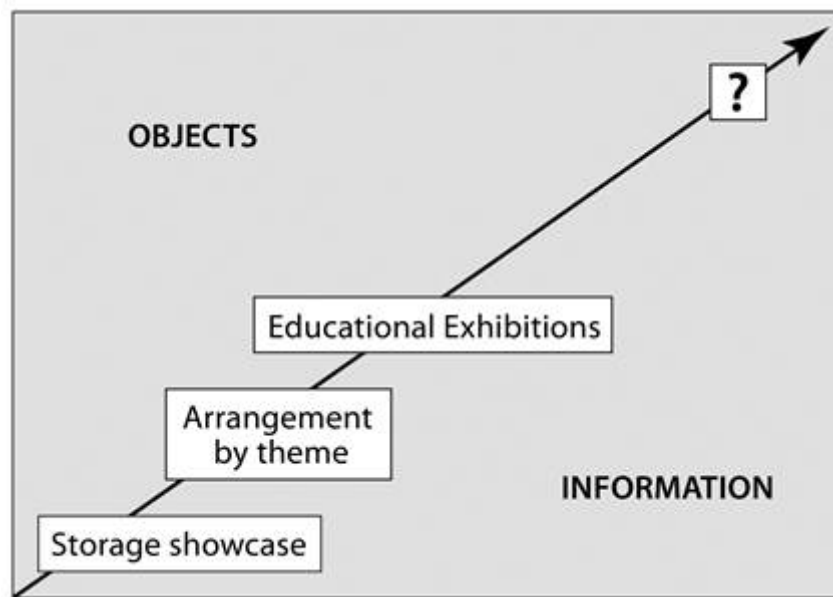
6.1. graph: Theoretical model of the interrelationships of objects and information. Different exhibition genres will assume a different place on this scale, depending on the quantity of information included. (Diagram based on Dean, 1994)

Here are two lists of text types that appear in exhibitions, as listed by Dean (1994) and reconceptualised by Vasáros (2010).[2]

Main Header	Main Header
Header	Introductory text
Title	Title
Text for parts of the exhibition	Description of a group of objects or a theme
Subtitle	Subtitle
Showcase text	Showcase text
Label of objects (data only or brief description.)	Label of objects (data only or brief description.)

6.1. table: Hierarchy of exhibition texts.

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[2] The rank order of different text types was slightly rearranged by Vasáros, 2010, whose work served as a source for this table. Cf. Vasáros, (2010): *Kiállító-tér ? Múzeumi tárlatok kézikönyve*. (The exhibition space – A manual of museum exhibitions.) Szentendre, Szabadtéri Néprajz Múzeum (publication of the Szentendre Open Air Ethnography Museum. (In Hungarian).

Table 6.2 below offers *suggestions about different text types* based on the work of authors listed in the "Further reading" section. Different authors suggest different text lengths which imply different ideas about the amount of information visitors are able and willing to read while walking through the halls. In any case, excessive descriptions should be avoided (we will show an example of this). Letter sizes may differ, depending on the space the exhibition is situated in (the small entrance hall of a historic monument and a large visitor reception area require and tolerate different letter sizes, of course.) Readability is an important issue, especially with labels underneath the objects. (We always have to consider senior visitors with limited eyesight.)

Main Header (letter size:5–7,5 cm)	The title of the exhibition catches attention and identifies the display. It will appear in the first line of the text on posters and banners. It should be short (1 – 10 words) and give some orientation about the theme and quality of the exhibition, as well as define the mood of the display. Sometimes style is more important than content, as it conveys most of the information we want to transmit.
Subtitle (of the Main header): 100–120 points	It is customary today to add a subtitle, especially if the main header is ambiguous. Avoid it if possible, because it diverts the attention of visitors. If you decide to use one, keep it to 10-25 words and provide relevant information. Content and style are both important.
Introductory text	It may be concise (50-60 words), or longer, maximum 200 words. (An extreme example: an introductory text of 525 words, seen in a county museum. It was placed in a narrow corridor, creating a bottleneck with visitors reading it.) The *intro text* should be concise and informative, divided into paragraphs of about 75 words each. This is a basic statement about the exhibition, explaining its content and major message.
Description of a group of objects or showcases: 30–40 point, or 24–32 points	We use this type of text if the exhibition is divided into parts („chapters"). This text shows the organising principles of the group and its special features. It should not be too long (75-100 words). It may start with a pun or catchphrase, but it should contain authentic, research-based information.
Label underneath the objects or identifying tag / description card: 18–22 points	Two types of texts fall within this category. First, the explanatory text that contains a lot of information about the object or small group of objects. This should be relatively short (usually 10-20 words, but no more than 60–80 words) and take up one paragraph. The second type of text, the description card, has no space limits as it must contain all the information available about the object.

6.2. table: Suggestions about the size, content and style of the exhibition text.


6.28. picture: An introductory text that visitors will find frightening. Neither its length, size or colour, nor its typography motivates us to read it. (Photo: Tamás Vásárhelyi)

6.29. picture: An interesting solution: the title of the exhibition and the label are both placed on a showcase of the Wellcome Collection in London. (Photo: Tamás Vásárhelyi)

6.30. picture: The badly designed introductory text of this exhibition is too long to read. Coming closer, we realise that the right hand column is the English translation. (Photo: Tamás Vásárhelyi)
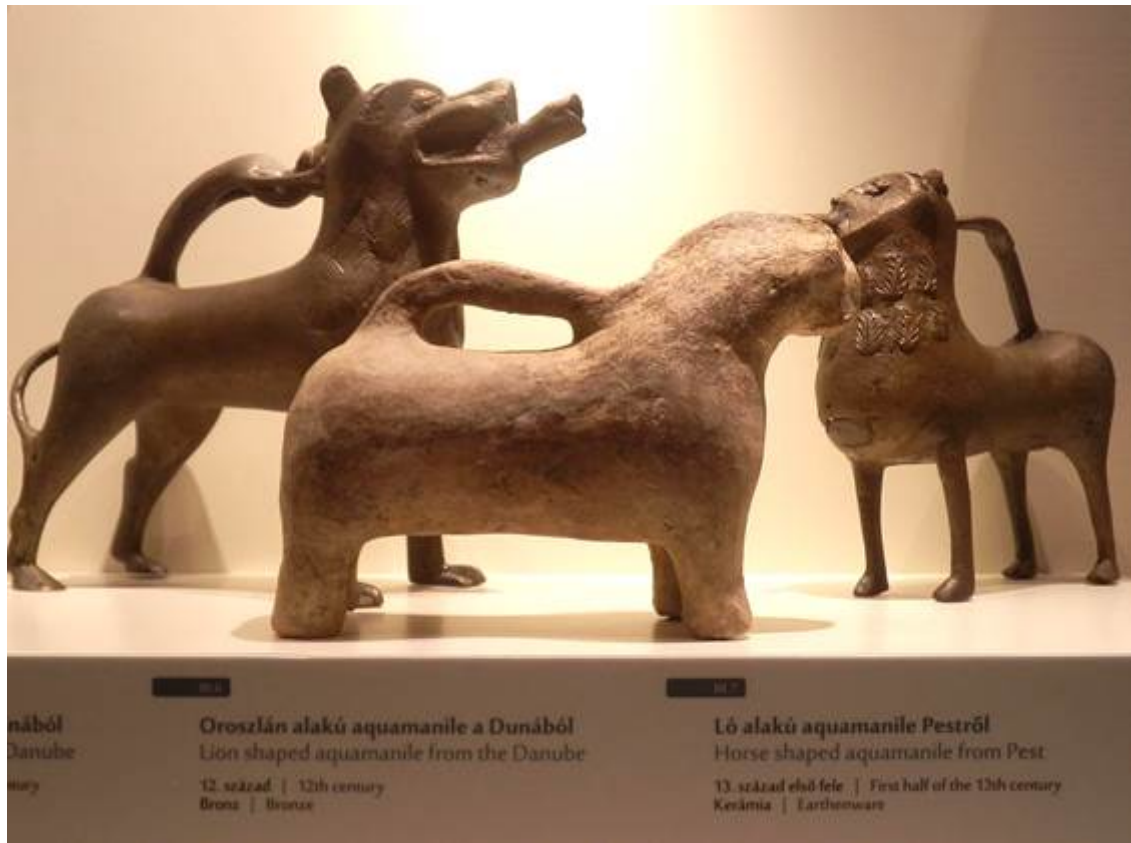
6.31. picture: The label under the objects: Lion shaped aquamanile from the Danube region. Only experts can understand what this means. (Photo: Tamás Vásárhelyi)

How can you make an exhibition text more interesting?

– *Ask questions! C*reate an appetite for information, feed the imagination – but also provide the answers!

– *Use everyday language!* Avoid the dialect and special words of researchers!

– *Quote!* Use quotations that are well-known (and place them in new contexts), or provide relevant quotes that underpin your message.

– *Use puns!* Rephrase slogans or catch phrases of advertisements!

– *Use analogues!* Any well-known statement helps visitors connect to new knowledge.

– *Activate! Ask visitors to do something, because action involves them in the world of the exhibition more intensively than reading and viewing.*

Be careful about the frequency of using the above, because visitors may easily become saturated and loose interest.

Characteristics of a good text:

– It formulates the message in a concise, accurate manner;

– It is a delight to read. It uses similes and metaphors;

– It is easy to read because its lettering is clear and large enough;

– It catches attention both visually and with its words;

– It is interesting – it tells visitors what they have always wanted to know.

Museologist-researchers assume that it is beneficial for visitors to learn about the theme of an exhibition as much as possible. However, if we consider that many children (and, consequently, many adults) suffer from reading and comprehension deficits, we should limit written information to the most important facts and descriptions.

There are cases when visitors do not find the information they need to understand an exhibit, but text overload is much more frequent. At one of the best exhibitions of the Hungarian Museum of Natural History, panels and labels contained forty pages of text in total. It is not convenient to read such a long story while standing. In one of the tasks at the end of this chapter, you can see how much time it requires to read and comprehend information at an exhibition.

Translation of labels and information texts

The translations of texts for museum displays, catalogues, etc. is extremely important for our foreign visitors. "A poorly translated text is immediately noticed by foreign visitors and immediately gives a very bad impression (of the whole exhibition and the museum itself!). Making a good translation involves more than a knowledge of the relevant language(s). Additional explanation may be needed to make things clear for the foreign reader. For example, "It happened during the 1896 Millenary Celebrations" may make sense to most Hungarians, but most foreigners will not know what that means. An 'edited' translation would read something like: "It happened during the 1896 Millenary Celebrations marking the 1000th anniversary of the arrival of the Hungarians in the Carpathian Basin." It appears that many exhibition organisers tend not to think of such matters or have no financial means to secure the services of good translators.

6.32. picture: This arrangement contains all the mistakes imaginable for an exhibition text. The well-lit showcase is in contrast with the text panel above. The colour of the panel is similar to that of the background – a feature that makes it difficult for visitors to even spot it. The text is inappropriately designed. It is written on two panels, badly attached to each other; therefore the end of one of the sentences is hardly visible. For visitors without a medical degree, it is difficult to comprehend the text. (Photo: Tamás Vásárhelyi)

6.33. picture: Badly placed text panel that distorts the view of the leaping animal. Positive aspect: the label clearly belongs to the exhibit and cannot be associated with another one. (Photo: Tamás Vásárhelyi)

6.10. Interactive approaches

Today interactivity is associated with information technology – but this chapter does not deal with virtual manipulations. (Museum multimedia is the theme of Chapter 7 of this book.) In the 1950s a new trend emerged in museums: previously, visitors could not lay hands on anything in an exhibition, but the *hands-on* model made objects available for tactile inspection. Later the *minds-on* model followed: visitors were invited to think about an exhibition, not just view or handle it. The current trend is *body-on*, the involvement of the whole body in the museum experience. Observation of learning styles of museum visitors has become an important part of planning. These approaches are targeted to those who enjoy learning by doing, information processing through experimentation and individual knowledge construction. The illustrated examples below indicate that most visitors appreciate these opportunities and readily engage in an interactive museum learning experience.

6.34. picture: In the National Botany Garden in Vácrátót, Hungary, children are invited to trace the outlines of leaves and compare their shape. (Photo: Tamás Vásárhelyi)

6.35. picture: In the National Botany Garden in Vácrátót, Hungary, interesting objects in beautifully designed containers invite visitors to explore the flora of the environment. (Photo: Tamás Vásárhelyi)

6.36. picture: Simple, useful and well-designed edutainment application at the museum of Pannonhalma Abbey, Hungary (Photo: Tamás Vásárhelyi)

6.37. picture: At the exhibition entitled „Man and nature in Hungary" at the Hungarian Museum of Natural History, this instrument made visitors curious. The dark patch on the floor indicates that many of them actually experimented with the interactive exhibit. (Photo: Tamás Vásárhelyi)

6.38. picture: At the same exhibition, attractive works of graphic art, maps and interactive computer games were placed on the same wall. Traces of footsteps on the floor clearly indicate which of them were most popular. (Photo: Tamás Vásárhelyi)

6.12. Visitor comfort

According to a German survey, secondary school students ranked the availability of comfortable seats the third most important feature of an exhibition. We asked teachers from three Hungarian secondary schools to repeat the survey, and cosy chairs and benches were again ranked third. If you visit an exhibition with a group of children, you will agree: slowly walking through the halls is a more tiring activity for them than running around, and seats are always welcome. Visitor comfort of course consists of much more than places to rest. It includes an agreeable temperature, a cloakroom near the entrance, information material (maps and signs) to make orientation easy, a museum shop with a wide selection of souvenirs and a café or restaurant for refreshments. In the tasks of this chapter, we give a few examples about concerning the evaluation of the museum experience.

6.39. picture: Children are not used to standing for a long time! (Photo: Tamás Vásárhelyi)

6.13. People (museum staff, visitors, exhibition mannequins)

We have seen how important social factors are for visitor experience. Museums must carefully select their staff, inform them about the exhibition and train them in visitor management. Even the uniform guards and guides wear may contribute to the message the museum (perhaps unintentionally) transmits. When defining where they will be placed, remember that museum guards are generally avoided by visitors. If they are sitting near an installation, visitors will avoid it. However, hosts and hostesses, explainers and animators – museum staff in charge of engaging visitors in activities that help them better understand what they see – are generally appreciated.

Planning for large groups of visitors entering the halls at the same time is difficult, because their arrival and routes are difficult to foresee. The observation and assessment of the movement of pilot groups before the opening and the evaluation of visitor traffic on the first few days of the show exhibition provides us with valuable information that we may use in (re)designing the exhibition. Finally, the dolls mannequins (human figures of humans included in an installation) are also important for the assessment of the ",,human factor" as they tend to make visitors stop and linger for a longer time than most other exhibits.

6.40. picture: If you show a uniform and select an old, worn and torn mannequin to wear it, you may damage the image of that profession. (Photo: Tamás Vásárhelyi)

6.41. picture: A successful use of mannequins in an installation: this idyllic image of the life style of man living in synergy with nature is an impressive sight. (Photo: Tamás Vásárhelyi)

6.42. picture: However, if we look at the old man from the angle most small children will see him, his facial features are terrifying! (Photo: Tamás Vásárhelyi)

6.43. picture: This doll shows the attractive uniform worn by staff members of the Nuclear Plant in Paks, Hungary. (Photo: Tamás Vásárhelyi)

6.44. picture: This garment symbolises the sexy and flirty atmosphere of the carnival in Rio de Janeiro, Brazil. In sharp contrast with the message of the bikini, the face of the mannequin is lifeless and its motion stiff. (Photo: Tamás Vásárhelyi)

6.14. Objects

Finally we have to speak about the objects – the major components of any exhibition. No doubt, they are the protagonists. We discuss them at the end of the chapter only because we wanted to call attention to the (often disregarded) other components of the visitor experience. The quality, number and arrangement of the objects are always suited to the type of the exhibition and the available space.

Our pictorial examples below illustrate some communication issues about the placement of objects and surrounding installations. As this book is not about creating exhibitions, we do not go into details about this topic, but suggest instead a list of books in the ",,Further Reading" section for a detailed rendering consideration of the issues about the arrangement of objects at in an exhibition instead.

6.45. picture: The positioning of objects of different quality, age and value may destroy the effects of a successful installation in the same exhibition. On the left: An object in an installation that emphasizes its beauty and function. On the right: A badly designed installation just beside the previous one: putting two, very different children's seats next to each other on a pedestal and mixing old and new, valuable and trivial, ruins the effect of the beautiful peasant chair. However, this arrangement is deliberate: the exhibition of the Hungarian Museum of Ethnography about the role of objects in our life, intends to call attention to the loss of care about the quality of furniture that surrounds us. These two installations make us think about an important issue through the means of exhibition design. (Photos: Tamás Vásárhelyi)

6.15. Access

Access is a contemporary exhibition design buzzword – and rightly so. We have identified three forms of access in museums: *physical, spiritual* and *emotional* accessibility of objects and ideas. Channels of museum communication have to work to make the display accessible on all three levels for as many visitors as possible. No matter if our target audience includes experts only or the wider public, we have to make every effort to engage them physically, spiritually and emotionally on a level they can relate to. An exhibition is not a curator's ego trip – it is meant to serve the community that supports the museum in a way it can access and appreciate.

Task 2:

Showcase design task.ppt

This is a **showcase design task.** In the PowerPoint entitled "*6. Showcase design task*", you find a picture representing an object, the size of which you should not alter. There is a background for the installation, too, which models an exhibition showcase. We also provide you with a text that should be included in the installation, along with the object. Please prepare three showcase designs with variations of any number of the effects listed below:

– The colour of the background;

– The positioning of the object;

–   The size of the text panel;

–   The size and type of the letters used for the text panel.

Task 3:

Read while standing and measure the time! Please measure how many seconds it takes you to read a simple text of 100 and 200 words. Please repeat this exercise twice with texts of increasingly scientific style. Calculate the average speed of your reading performance and divide it by the number of words in the text. The result is the average amount of time it takes a visitor to read an exhibition label. Recall your last visit to a museum: how much time would it have taken to read all the information available for visitors? Please also calculate how much time it would have taken you to read all the text presented at the exhibition of the Hungarian Museum of Natural History that we mentioned before in this chapter. The volume of the information provided on panels and labels was 13,000 words in total!

Task 4:

Practice the extremely difficult task of writing exhibition labels! Look for a paragraph of about 20 lines in a popular science textbook that might be used for the description of an installation. Based on this, prepare a text of no more than 100 words for the main information panel, a text for the installation (maximum 60 words) and an object label (25 words or less).

Further reading

Belcher, M. (1991*): Exhibitions in museums*. Leicester University Press, Leicester

Dean, David (1996): *Museum Exhibition: Theory and Practice*. ICOM, Paris

Dernie, D. (2006). *Exhibition Design*. W. W. Norton & Company, New York

ECSITE e-Newsletter – the quarterly newsletter of the European Network of Science Centres and Museums

Exhibitionist – a journal of the National Association for Museum Exhibition

Exhibitor – a journal on trade show and events.

Jones, J. (2013): What colour should gallery walls be? *The Guardian*, Jonathan Jones on Art Blog, Friday 21 October 2011

Hall, M. (1987): On display. A design grammar for museum exhibitions. Lund Humphries, London

Lord, B., Lord, B. G. (2002) : *The manual of museum exhibitions*. Rowman Altamira, London

Lorenc, J., Skolnick, L., Craig, B. (2007): *What is exhibition design?* RotoVision, London

McLean, K. (1993): Planning for people in museum exhibitions. Association of Science-Technology Centers, Washington, DC

Serrell, B. (1991): *Exhibit Labels – and Interpretive Approach*. Rowman Altamira, London

Serrel, B. (1993): *Paying attention: visitors and museum exhibitions*. American Association of Museums, Washington

Smithsonian Guidelines for Accessible Exhibition Design. The Smithsonian Institute, Washington. http://www.si.edu/accessibility

Chapter 7. Multimedia in museums

(Andrea Kárpáti)

7.1 Information and Communication Technology (ICT) in the exhibition

"Time and again, new developments in technology reconfigure the relationship between man and machine, almost automatically ensuring that the technology concerned comes to play an increasingly mediating role in our day-to-day lives. Our personal impressions, experiences, activities and interpersonal contacts are mediated, not just technically but intellectually, by telephones, computers, television, cars and planes. According to Dutch philosopher Peter-Paul Verbeek, this complex interrelationship between man and technology is not a threat to our individual human freedom, but rather an opportunity to shape our freedom and human identity within that relationship. Ultimately, what is important is to steer the development of new technology, driven as it is on the one hand by the technological field itself (the engineers and inventors) and on the other by society (critical consumers).

These days, science museums and science centres are increasingly acting as knowledge brokers, promoting and facilitating enquiry-based learning and citizen science in the information society of today. We operate right at the cutting edge of these fields and are important intermediaries in the process of transformation. Together with our visitors, we seek to gauge the significance of new technologies, define our relationship to technology and shape our human identity. Technology is constantly changing and doing so at an ever-increasing pace; nevertheless, it will remain more than ever an inherent part of the human condition. (Okkersen, 2012, 1-2)

7.1. picture: Many useful documents for museum education – including multimedia applications – may be retrieved from the Resources section of the home page of GEM – the Group for Education in Museums. (Page view from 26 June 2013.)

Computer applications are never going to replace real-world museum visits. On the contrary, a sudden encounter with the digitized collection of a museum in cyberspace may whet the appetite for a visit even among those Net generation members who are unlikely to consider such a trip. However, pedagogical methods museums employ must change and adapt to a new generation of visitors with new information-seeking and processing habits, as well as cultural preferences. Technology is following the path that practitioners in education initiated: they offer new methods and rich content to make effective use of inquiry-based activities. In museums, too, explainers, (or, to use more contemporary names for the job, "*edutainers*", "*infotainers*", "*mediators*") and other kinds of personnel responsible for building bridges between different visitors and the museum collection will never be replaced by digital interfaces. The need for human mediation is increasing, even while a vast variety of technological devices become standard features of museum environments.

Some people speak about the "*Disney-fication*" of the museum, pointing at edutainment devices that entertain more than they educate. Others find that multimedia applications are a nuisance and do more harm than good. In any case, using information and communication technologies (ICT) in the museum environment is one of the most disputed and fortunately also most researched topics in museum education. Here is a list of some of the current research and development issues about the relationship of digital devices and visitors.

– What sort of information should appear printed, and what should be made available through interactive multimedia kiosks integrated with exhibits?

– How can people personalise their tour through *tagging* exhibits online?[1]

– How can smartphones play a role in an exhibition tour, and what role does the explainer play when visitors decide to use their phone as a guide through an exhibit?

– Can and should our digital footprint be used to profile our visit?

– How can we use augmented reality or three-dimensional visualisation to bring objects to life?

– How can we motivate our visitors to share their comments and criticisms of our offerings on social websites (Facebook, Twitter, Flickr, YouTube, Diigo, etc.)?

This chapter offers some ideas and successful examples on how we can use technology to complement rather than compete with human mediation in the museum.

 "*Museum 3.0- what will the museum of the future be like?*" is perhaps the richest portal on the internet that features museum multimedia related news.[2] It surveys new titles of literature, provides information about conferences, and described results of successful new ICT developments that may be of relevance for museum multimedia. It is also an active professional discussion site where developers may connect with more than 4000 members from more than 60 countries.

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[1] Tagging means attaching descriptive labels to a thing or concept. In most cases, these labels are provided by the software application that stores and presents the tags of its users.
[2] Other networks that provide a space for dialogue between developers: Museum Computer Network, Web Museum Network, ECSITE – European Network of Science Centres and Museums.
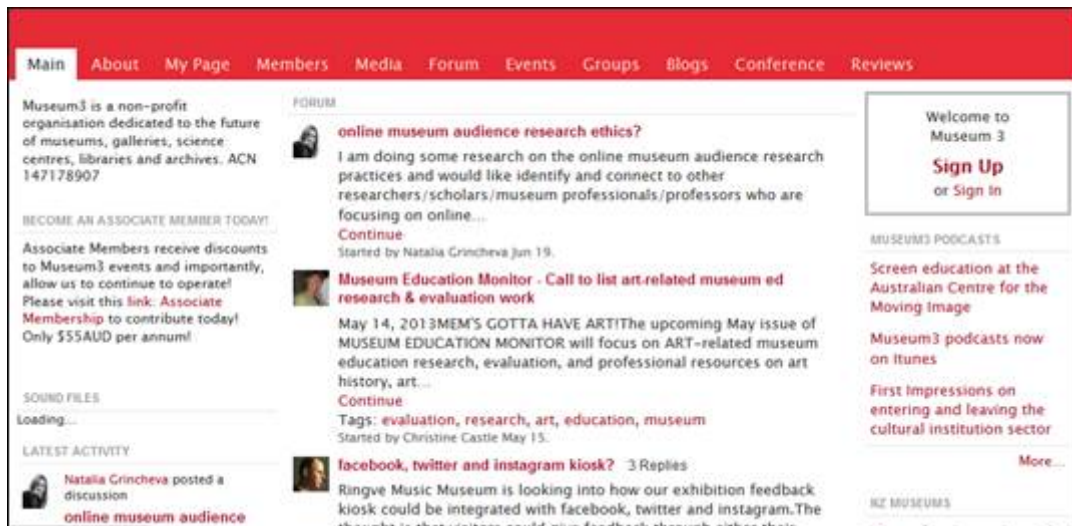
7.2. picture: Museum 3.0 home page with major topics. On 26 June, 2013, the leading article informed us about one of the hottest issues of using ICT applications in museums: visitor research ethics.
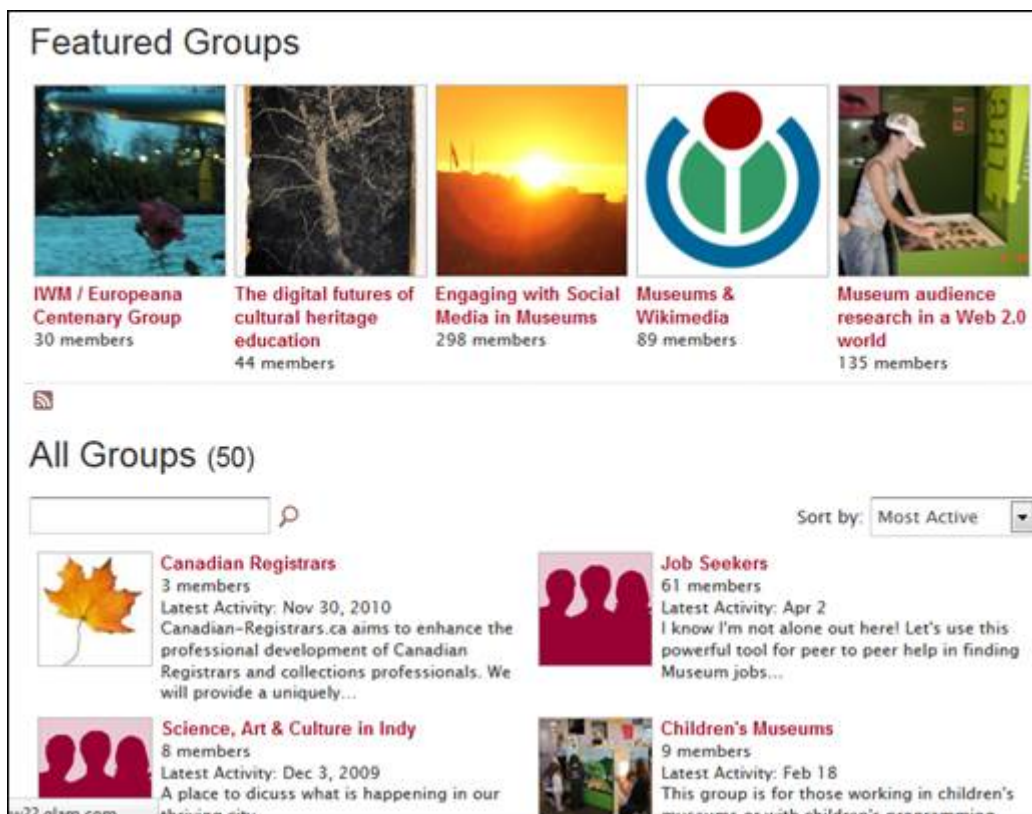

7.3. picture: Groups of Museum 3.0. Among the highlighted discussion communities there is a European Union initiative: europeana, which we will discuss below).

Research and development issues

Multimedia applications and installations with real objects should be harmonised to serve the purposes and not steal the show from the exhibition. The new communication culture of the 21st century may be characterised by the "*Iconic Turn*" – the increased use of images ("icons") in everyday as well as scientific discourse. The abundance of visual signs and symbols are a result of an increased use of ICT devices that tend to rely on icons more and more with the appearance of the touch screen and mobile computing.
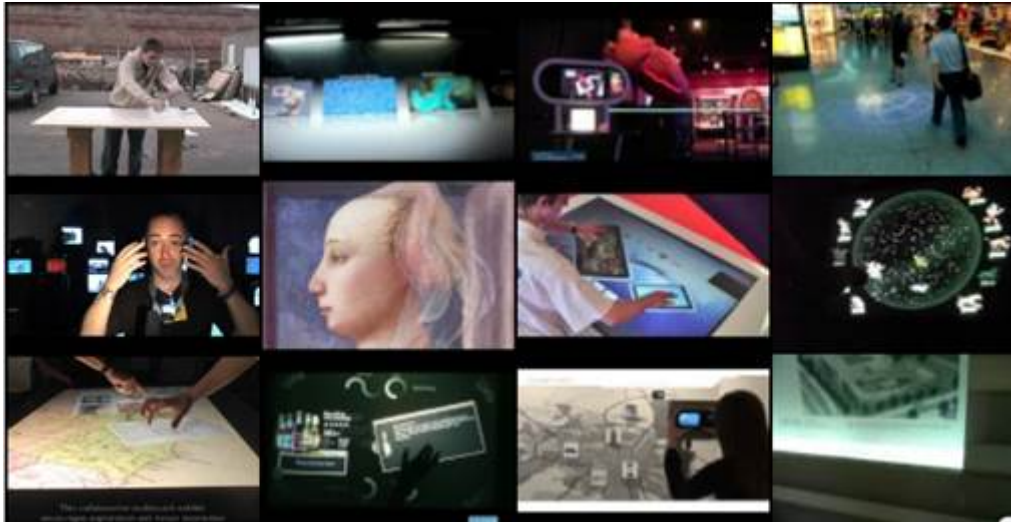
7.4. picture: Multimedia flat screen tools at the Museum of Communication in Berlin, Germany. The montage shows different forms of their use. Visitors benefit from films and photos downloaded by their peers standing at the same table. Some of these ad hoc groups even engage in a discussion about the content they have just opened.
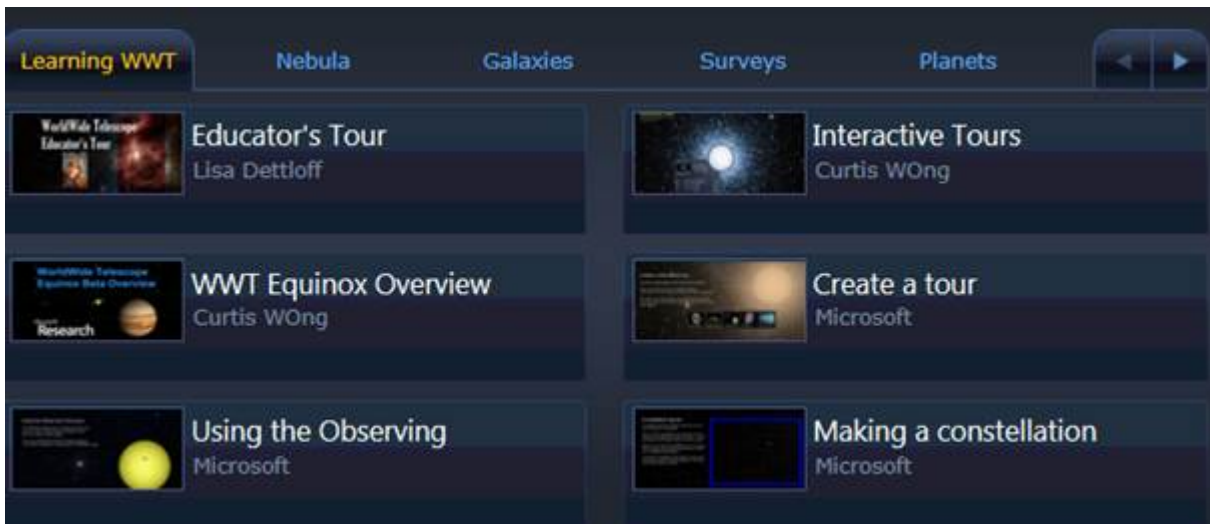
7.5. picture: A reliable site for interactive astrological information search: the Microsoft Worldwide Telescope. This application is frequently used at exhibitions and public observatories to complement visitor experience and provide dynamic, on-demand information about the stars. Visitors may browse a vast database and play simulations that imitate the movement of stellar constellations.

7.6. picture: Museum multimedia (photo stills and moving images) are used alongside real objects in the Museum of the Solidarity Movement in Gdansk, Poland. 2008. (Photo: Andrea Kárpáti)

7.7. picture: Museum multimedia (photo stills and moving images) and copies of works of art used in an installation. Museum of the Solidarity Movement, Gdansk, Poland. 2008. (Photo: Andrea Kárpáti)

7.8. picture: Computer-supported interactive information panels: the Alfred Nobel Museum, Oslo. The transparent Plexiglas board shows the names and biographical details of Nobel Prize winners and some photographs and contemporary newspaper articles about their achievements. (Photo: Andrea Kárpáti)

The largest project about digitization of museum collections is the Google Art Project.[3] In collaboration with about 90 of the world's most acclaimed art museums (as of June 2013), this application enables people to view thousands of artworks online in great detail – in a way they will never be able to observe them in real life. Here are the functionalities of the software (as described by Google) that shares digitized artwork and supporting labels by curators as well as users' commentaries.

– *Explore museums with Street View technology*: virtually move around the museum's galleries, selecting works of art that interest you navigate though interactive floor plans and learn more about the museum you are exploring.

– *Artwork View*: discover featured artworks at high reapplication and use the custom viewer to zoom into paintings. Expanding the info panel allows you to read more about an artwork, find more works by that artist and watch related YouTube videos.

– *Create your own collection*: this feature allows you to save specific views of any of the 1000+ artworks and build your own personalised collection. Comments can be added to each painting and the whole collection can then be shared with friends and family.

Google has agreed with partner museums that the number of galleries, artwork and information to be shared through the database is a decision that rests with the institutions. All content in the information panels was provided by the staff of participating museums. Visitors to the site may view them in the manner permitted by Google's Terms of Service.[4] The images on the Art Project site are copyright protected because the high reapplication versions of artworks are owned by the institutions and are subject to copyright laws around the world.

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[3]This film shows how the Google Art Project works in museums: How was it made? Here is an overview about the use of the software application in museums.
[4]Visitor information, methods and terms of use of the Google Art project on YouTube.
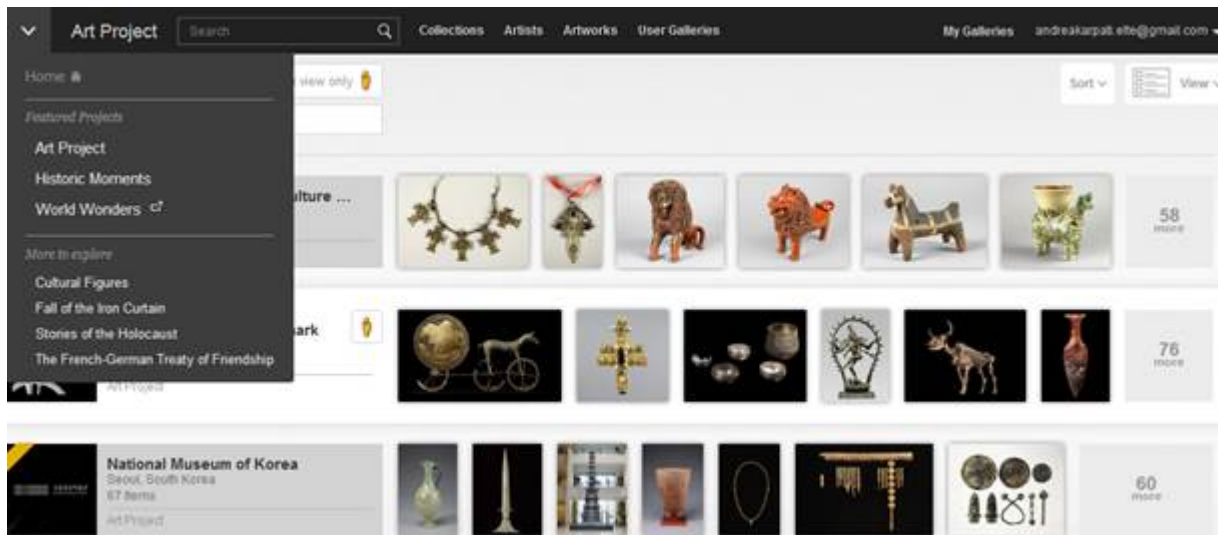
7.9. picture: One of the pages of the Google Art Project, showing the „My Gallery" site of the author of this chapter while browsing the National Museum of Korea collection. At this page, users may build their own sets of preferred art works. There are collections selected by experts, too, like the ones about „Historic Moments and „Cultural Figures", shown on the left hand side of the picture.
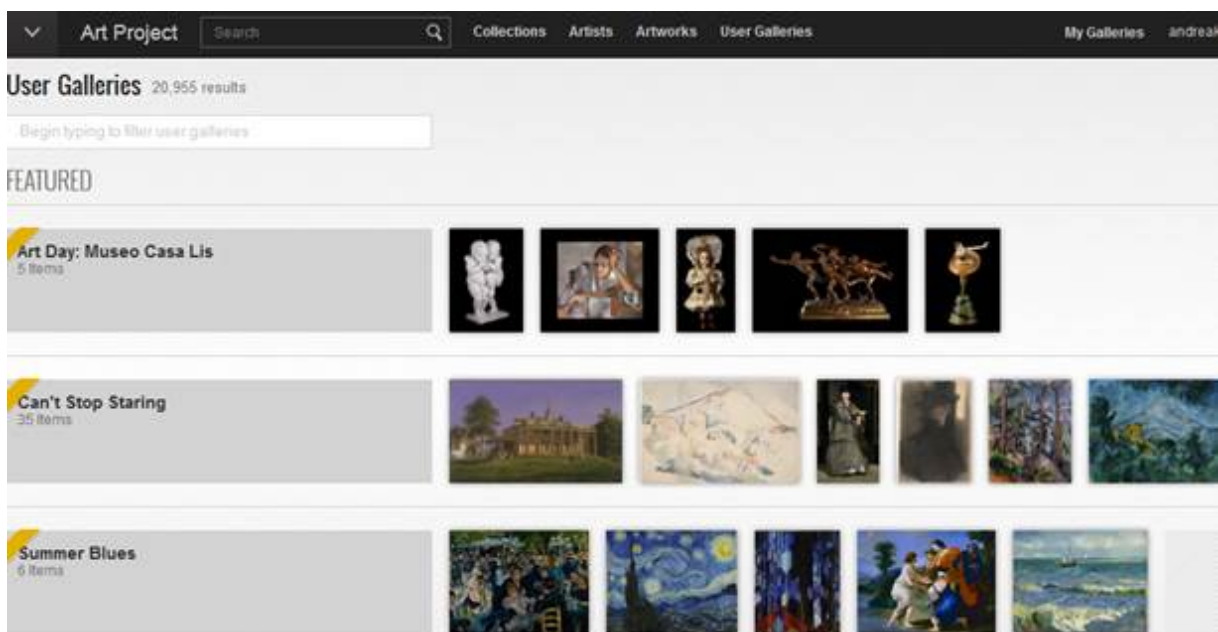
7.10. picture: „User Galleries" features collections that users of the site produced and shared.
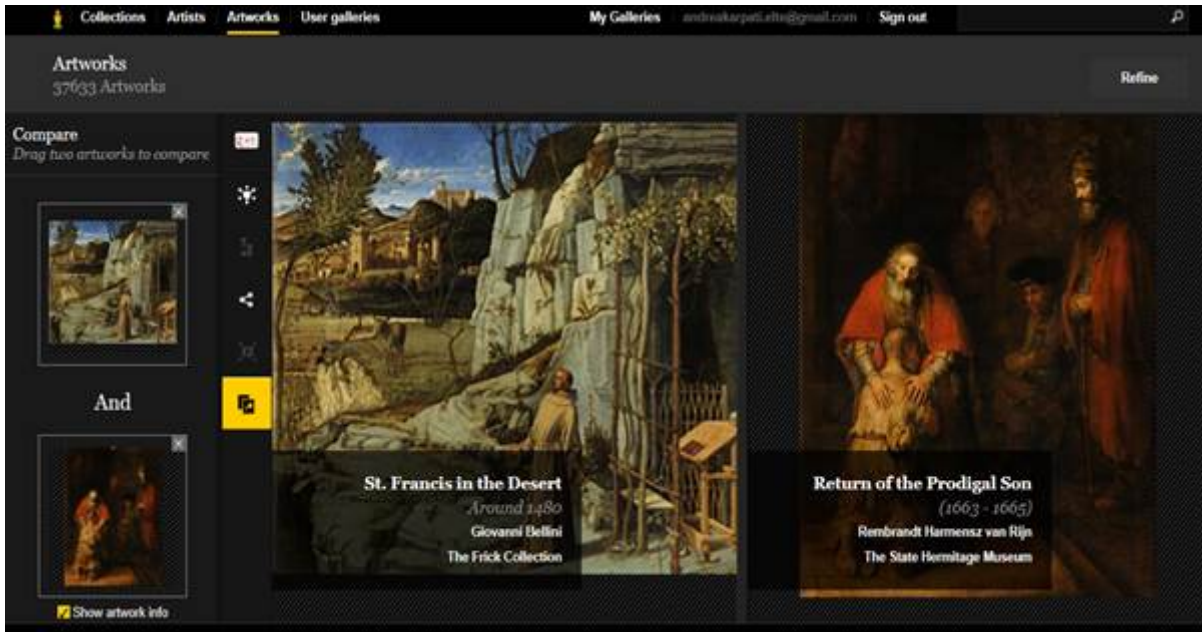
7.11. picture: The Google Art Project offers a „Compare" feature at the bottom of the pages. Selected works are featured side by side. Both can be enlarged to observe similarities and differences of brush strokes or texture, colour hues or the quality of lines. Participating museums often use this resource during their educational activities to point out the international significance of the works they hold.
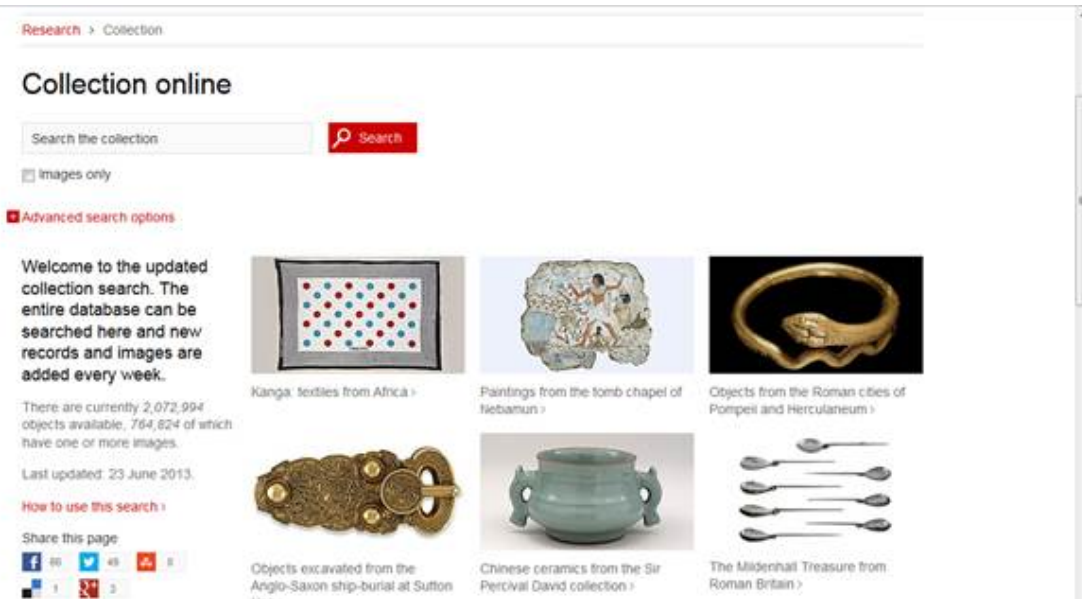
7.12. picture: The searchable, free and open to the public pictorial database of the British Museum features new images and texts each week.

The museum visitors of our times are first and foremost interested in experiences. In previous chapters of our book, we have already discussed this *consumer attitude* of the museum visitor. Multimedia applications with „take home" and „download and adapt" features readily satisfy this demand. Interactive, on-demand information consoles that are supported by a large database and a variety of labels for visitors with different educational backgrounds, previous experiences and interests, are likely to provide visitors with information on a level and in a format that matches their expectations better than any written museum guide or label ever could. Such applications support both the educational and the research dissemination function of the institution because it is up to visitors to decide how deeply they want to dig into the repository of knowledge provided.

Successful ICT applications in museums include hypermedia elements: they offer text, static and moving image, sound and any mixture of these. "The content of one medium is always another one." – This remark of Marshall McLuhan about his contemporaries, the technologically minded *"gadget lovers"* on the eve of the information revolution, is relevant for ICT solutions in museums as well.(McLuhan, 1964, p. 52.) Hypermedia solutions are useful educational devices because they offer connections among pieces of information we might not have forged ourselves.

7.13. picture: A bilingual (Hungarian and English), searchable database of Hungary's leading collection, the Museum of Fine Arts, Budapest.

Planning multimedia applications

Good multimedia design starts with research and planning. In an exhibition budget, multimedia applications are among the most expensive items. Therefore, careful planning is of utmost importance. Steps of the planning and design process are listed below.

Preliminary planning

– *Define which part of the exhibition requires a multimedia application*. (Example: skeletons exhibited will be better understood if the reconstructed images of animals will be made available with data about their reconstruction.)

– *Identify the message to be transmitted and the content to convey this message.* (Example: the synergy of zoology and archaeology with palaeontology provides more effective research methods for exploring the development of extinct species than any of these disciplines alone.)

– *Define the educational objectives and methods* to be used in the design of the application! (Example: constructivist theory as an educational model is often selected because it relies on the previous experiences of the learner / visitor and invites individual exploration. In line with this model, interactive applications that go beyond information retrieval will be preferred.)

– Organise the planning, design and programming team: involve ICT specialists, museum educators and explainers to support the curatorial group! (Example: a set of quizzes about dinosaurs is suggested to invite families to browse for information together in one of the exhibition halls. The content of the quiz is jointly defined by the group of developers to suit different age and knowledge levels, while still retaining scientific authenticity.)

– *Invite the marketing specialist* to come up with a need specification for ICT solutions to market the exhibition! (Example: a freely downloadable edutainment product about the life of dinosaurs in the geographical area of the museum, including an advertisement about the exhibition and its accompanying events planned for the introductory page of the museum portal.)

– The curator in charge of the exhibition makes final decisions about *purchasing infrastructure and commissioning software development*. (Example: touch screens and information consoles necessary for every hall are specified and a tender for bids for purchase is issued to obtain data for cost calculations.)

– The director of the museum and the human resource manager oversee *preliminary planning and assigns costs for infrastructure and software development*. The workload of staff members and external specialists is calculated for the maintenance and support of the multimedia applications. (Example: The life span of a touch screen in a large museum with thousands of visitors a day is about two weeks. The software of an information consol should be refreshed at least once a month. Interactive applications may need a support person for visitor inquiries, and expensive equipment should be carefully guarded, possibly by extra security personnel.)

7.14. picture: Irregular information panel_ the endocrinologist Vincent Goffin is personified here through a life size sculpture. The information console on his right offers a list of themes he can „speak" about: his childhood, his studies, his career as a scientist and his major inventions. A pushbutton activates the messages he recorded for the exhibition. Heureka Science Centre, Helsinki, 2011. (Photo: Andrea Kárpáti)

Technical planning

– *Specify hardware and software requirements!* (Example: review of existing equipment and listing of new devices and supplementary parts for old ones needed.)

– *Develop installations* that allow continuous access to multimedia applications in need of maintenance and repair during the exhibition! (Example: a stand that supports an information screen should be easy to open in order to access cables inside.)

– *Ensure adaptability and expandability* of the ICT equipment! (Example: in case an interactive edutainment product is much more popular than others, more computers have to be installed to avoid queuing.)

– *Commission maintenance and support!* (Example: specify which staff members – e. g. technicians, guards – will be responsible for the equipment of each hall. If necessary, contract external personnel.)

– *Decide about software development:* are new applications necessary, or can previously utilised solutions be adapted and re-used? (Example: in a previous exhibition, a puzzle game was very popular with small children. The pictures used for the puzzle can easily be replaced by images from the new exhibition.)

– *Decide which multimedia solutions need constant support and safeguarding.* (Example: a new application involving holograms is extremely expensive – a guard should be placed near it to oversee it constantly. A simulation environment may be difficult to use for smaller children – a volunteer should be stationed close to the application at weekends.)

– *Test if applications offered by IT specialists are user friendly*! (Example: invite volunteers of different age groups to test the applications before they are accepted and installed in the exhibition.)

7.15. picture: A mixture of digital and real objects in an installation: a crime scene after the police has started working. At the Heureka Science Centre in Helsinki, Finland, this part of the exhibition about forensic science shows how evidence is collected. 2011. (Photo: Andrea Kárpáti)

7.16. picture: The bullet on the floor shows from where the murderer fired the deadly shot. The label instructs visitors to visit the (simulated) ballistic lab in the next installation to see how data are processed by the forensic experts of the police. Heureka Science Centre, Helsinki, 2011. (Photo: Andrea Kárpáti)

Multimedia content

– *Invite the museum educator/explainer team to define target groups* and adapt the text of the information panels of the exhibition for multimedia applications that suit these groups. (Example: test the application through reading the text out loud and measuring the time required for this. Identify concepts that may need explanation and ask for an on-line lexicon application to be included i the software if necessary.)

– *Ask multimedia developers to review the content provided* and require alterations that better suit the applications. (Example: curators are likely to overload the text with scientific data. Multimedia developers should have a final say in how much text and how many illustrations get on one info screen.)

– *Ask the marketing staff to supply new and exciting news about the exhibition to feed social media applications* developed for the show! (Example: the Facebook page of the exhibition may take up longer pieces of news while Twitter needs short information about upcoming events.)

7.17. picture: A good example of the placement of touch screens: large gathering space with comfortable tables for the screens in the centre (Photo: Andrea Kárpáti)

7.18. picture: Multitasking is a natural way of information retrieval for the generation that grew up with the use of multimedia. Today in their thirties, the Net Generation and their children (called Generation X and Y) welcome information kiosks that enable them to see multiple screens and compare content in the way they normally do. The design of the panels, built in a wooden installation, is clear and the positioning of the top row of the screens makes them easy to view even for small children. (Photo: Andrea Kárpáti)

Sustainability

– *Estimate the costs of maintenance and support* of the exhibition and see if they are manageable. If not: reduce the number and/or complexity of the applications! (Example: if you have no maintenance team constantly available, ask for more robust applications that require biweekly or monthly maintenance only!)

– *Define staff tasks about the maintenance and support* of multimedia installed at the exhibition in exact detail. (Example: who is going to do the monthly refreshment of the software of the information kiosk in Hall 3?)

– *Assign supervision and evaluation tasks!* (Example: who is in charge of the proper functioning and adaptation / alteration of all the media applications on Level 2?)

– *Ask the curatorial team to monitor visitor use statisticsand reports of the educational personnel* to define if changes in the content of multimedia are necessary. (Example: about twenty visitors ask the guard each day about a description included in one of the interactive multimedia because they do not understand the scientific terms in the text. and therefore they cannot solve the quiz.)

– *Define who is in charge of servicing the equipment and assign costs for their disposal* for immediate action if a computer breaks down. (Example: if a touch screen in a major exhibition area is blank for weeks, returning visitors will perceive it as lack of attention to their needs and complain.)

7.19. picture: An exhibition area equipped with a variety of multimedia applications designed to suit the theme of the exhibition about the history of vehicles at the Museum of Natural History in Oslo, Norway. 2008. (Photo: Andrea Kárpáti)

7.20. picture: An innovative application to show wave length and pitch. When you imitate the sound produced by the conductor, the pitch of your voice appears on the board for you to see if you could sing the tone correctly. 2012. Haus der Natur, Salzburg (Photo: Andrea Kárpáti)

7.21. picture: After you have imitated the sound, the screen shows your result. 2012. Haus der Natur, Salzburg (Photo: Andrea Kárpáti)

You will find web portals with information to support your planning process below. The images of the pages of the portals may also be used for the study of web page design that is functional, visually pleasing and reflects the corporate identity of the association, community or institution that they serve.

7.22. picture: Traditional and digital information panels in a small museum. The major attraction is the skeleton of a young dinosaur found in the area. All multimedia content focuses on it. 2009. Burpee Museum, Rockford, Illinois. (Photo: Andrea Kárpáti)

Multimedia applications at an exhibition may support both active and passive knowledge acquisition. According to the active information processing model, text and images are provided for selection, testing and eventual download to a variety of digital equipment including smartphones, tablets and PC-s. If the resource supports passive dissemination only, the visitor is faced with a linear stream of information he or she may browse but not possess.

With the popularity of iPads increasing, the active mode is gaining importance. However, several forms of passive consumption of information have remained popular and authentic. Examples: film shows related to the topic of the exhibition, documentaries projected on the walls of exhibition halls, holograms that bring life to installations with period furniture or video screens placed near an object to show how it was used and indicate that it was a useful device not just an old piece of woodcarving.

On the Museum 3.0 home page described before, we can find appropriate applications for each purpose:

– Heritage in Motion Prize, founded by the Europa Nostra Agency;

– European Museum Academy Prize;

– MUSE Museum Multimedia Prize , ;

– Children's Museum Prize.

7.23. picture: After having seen handwritten notes of the great master and musical instruments used by him and his contemporaries, a music booth invites visitors to top the experience. "Feel Mozart!" exhibition – memorial exhibition at the Mozart House in Salzburg, Austria. 2012. (Photo: Andrea Kárpáti)

7.24. picture: Interior of the music kiosk. You can actually „Feel Mozart" in the niche provided at the memorial exhibition in the Mozart House in Salzburg, Austria. 2012. (Photo: Andrea Kárpáti)

Digital, handheld exhibition guides

Before listing traditional audio guide applications available in most museums since the 1970s, let us highlight an unusual, creative approach. Normally, a visitor picks up an audio guide and goes through the exhibition using it.

However, this application is held by the human guide who uses his or her "colleague" to enrich the interpretive talk and answer the questions of visitors.

A new software K-Jing was borne out of Museolab. The name is a reference to D-Jing (a music mixing program) and V-Jing (a video mixer) where the K stands for knowledge (as in knowledge mixer). In practical terms, K-Jing is a client-server application, which uses the internet and portable tablet computers such as the iPad. Before using K-Jing with the public, explainers select media (pictures, videos) and organise them in different libraries. Once chosen media are available on the server, an explainer can use them as they choose while walking through an exhibition, talking to a group, or conversing with only one or two visitors. So far, it's possible to integrate this multimedia enhancement with up to six different screens in an exhibition. We've tested K-Jing for months in our new exhibition about art, informatics and science. Our explainers' feedback about K-Jing has been positive, even if some of them don't yet feel comfortable with an iPad in their hands while facing the public."[5]

7.25. picture: An advertisement for a museum application designed for iPads.

[5]The application was developed by the staff of *Centre de Culture Scientifique Technique et Industrielle*, CCSTI, and piloted at their exhibition, "*XYZT: Abstract Landscape*"

7.26. picture: Testing of mobile visual guides at the Merzedes Benz Museum in Stuttgart, Germany. 8 May, 2010.

An audio guide can have many functions. As with the one described above, it can furnish explainers and visitors with new knowledge necessary for having a deeper understanding of an exhibition. It can satisfy simpler needs, too, such as helping us to find our way around or pronouncing the names of masters of works of art from distant lands. Its major benefit is flexibility: it can be stopped and restarted at the touch of a button, and information offered by the museum can be taken in or skipped at wish.

For museum staff, its most convenient feature is the ease of adaptation and modification. If it turns out that most visitors find it difficult or boring to listen to long explanations, recorded content can be easily adapted, even if it contains images as well as sound. Good examples of the use of audio guides in conjunction with other visitor support functions are: Boston, Museum of Fine Arts, digital museum guides and Interactive tours.

7.27. picture: Opponents of the use of smartphones emphasize that this gadget keeps friends and family members apart from each-other because it isolates the visitor from others while seeking information individually. Moreover, exciting information shown on the screen may distract attention from the works of art exhibited, drawing attention to virtual reality instead. (Photo: Andrea Kárpáti)

Most of the audio, video or multimedia guide applications are designed to serve visitors with a variety of educational backgrounds, experiences and needs. When the program is started, visitors can choose from several program options ("For experts", "For tourists", "For children") and switch over if their first choice yields unsatisfactory explanations. Examples: a guide accessible online for free download helps tourists to find monuments and services all around Hungary (Guide at hand, developed by the Institute for Computer Science and Control of the Hungarian Academy of Sciences); and the audio guides for visitors with special needs by InSitu Solutions.

Here are some unusual features and functions handheld guides may have:

– *Location-specific content delivery***:** visitors are offered information according to their location in the gallery.

– *Visitor tracking***:** a sensor tracks visitors' locations in the galleries. This system may also alert staff if a device fails or the visitor otherwise appears to be in need of technical assistance.

– *Interactive survey and response:* the system asks and records visitors' opinions about a work of art just viewed;

– *Creative play***:** visitors can use a digital drawing device or mix their own soundtracks from melodies offered by the video guide to accompany their viewing of a work of art;

– *Visitor paging***:** staff may send visitors alerts about things they are just looking at (or about to pass by in haste), or send out pre-programmed, timed alerts about the start of a video screening or guided tour.

– *Visitor email facility***:** *visitors are able to email themselves information about objects they want to be able to access at home.*

Digital guides are increasingly available as downloads for mobile phones. Pétursdóttir (2005) considers this device an excellent educational resource, as it stores downloaded information for later retrieval and reuse. At the annual *Archive of Museum Informatics (ARCHIMUSE) conferences* current applications and their use can be discussed, along with other issues about employing multimedia in museums.
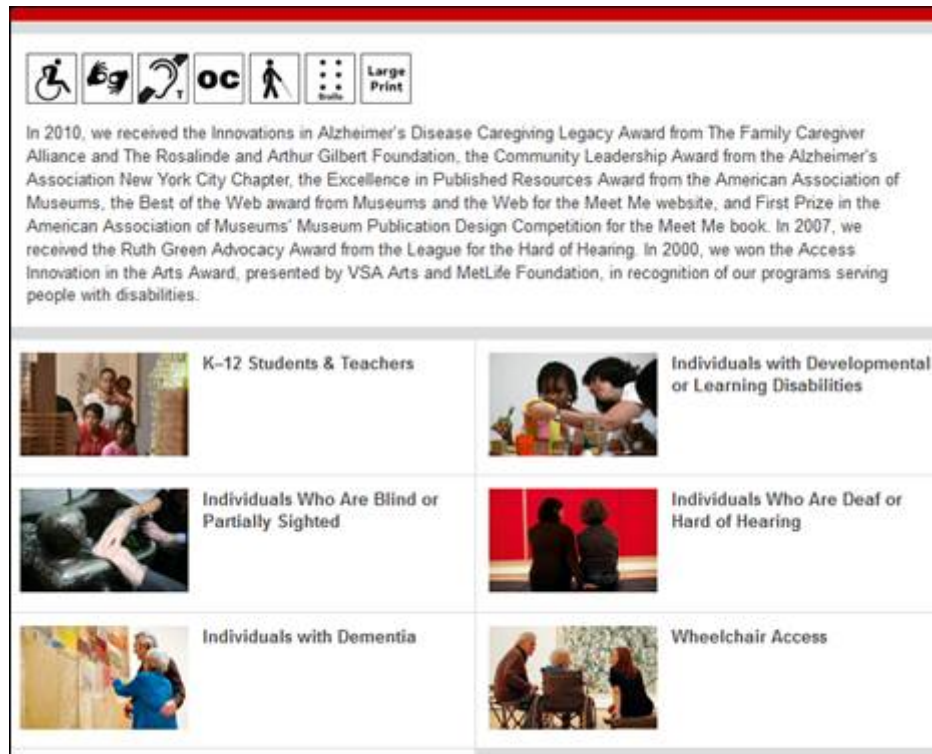
7.28. picture: At the Museum of Modern Art, New York special facilities are offered not only for people with visual or auditory impairments, but also for those with learning problems, wheelchair users in need of special devices to access some halls and senior citizens suffering from dementia or Alzheimer's disease.

At the Museum of Modern Art (MOMA) in New York, the *MOMA – Access Program* offers:

–   "*Tactile Tours*" that the visually impaired and persons accompanying them can download. They provide a detailed explanation of sights during a tour specially designed for them, offering objects for touching;

–   "*MoMA Audio*": guided tours on one handheld device for four different visitor groups;

–   *Special guides* that explain how to find services for individuals with different disabilities; wheelchairs for the elderly; large elevators to the upper floors; accessible toilets, etc.

–   *Special signs* at the exhibition for persons accompanying the visually impaired to stop and invite them to read the labels in Braille or in giant script;

–   *Video conference facilities for loan:* totally immobile, spastic patients may join gallery tours from their bed, using laptop computers with videoconference software installed. In this way, they can not only view the exhibition and hear the guide, but also hear other visitors' reactions and ask questions.

Multimedia applications in exhibitions

Many museums produce a multimedia „teaser" – *a virtual tour* around their halls to invite users to consider a real world visit. These tours are valuable educational resources for teachers who use them during the preparation for an excursion a visit to the museum. Students volunteering to give an introduction to their peers about the exhibitions to be seen will find such virtual "sneak peeks" very exciting and share them with their classmates through social media.

7.29. picture: „Virtual Louvre": virtual representation of a real space in the Louvre, Paris, France. Visitors may explore the space and the art works before actually entering the hall.

A museum exhibits objects of value and of interest – anything else to be seen in a display is only intended to support the appreciation of these unique (master)pieces. This axiom is no longer valid for museums of natural history and their high-tech little sisters, the science centres. Here, technological innovations and research results may not always be presented in actual reality – partly because their core constituents are invisible (cf. nanotechnology) and partly because the most important concepts cannot be understood without interaction. Therefore, *simulations* constitute an important part of museum multimedia. They fall between the real objects and information devices because they do much more than provide information: they invite you to experience a process and through this share the "*eureka* experience" of scientists and engineers.

An example: Stan, the "patient teacher", a computerized Human Patient Simulator that is able to simulate a heart or asthma attack and many other real medical conditions. Stan can breathe, blink and even speak. He has a heartbeat and his blood pressure can be measured by standard devices. This medical training equipment is normally used in hospitals, nursing and medical training institutions, and enables safe practice of professional interventions for future doctors and nurses. At the exhibition *You – The Experience* at the Museum of Science and Industry in Chicago in 2009, he waited for visitors to play the role of a doctor examining a patient, diagnosing an illness through observation and hands-on trials of medical techniques.

7.30. picture: Stan, the „patient teacher" provides information about his symptoms to visitors through a variety of multimedia technologies at „YOU – the Experience", a temporary exhibition at the Museum of Science and Industry in Chicago in 2009. (Photo: Andrea Kárpáti)

7.31. picture: Examining blood flowing through the veins – a multimedia experimentation site at „YOU – the Experience", a temporary exhibition at the Museum of Science and Industry in Chicago in 2009. (Photo: Andrea Kárpáti)

7.32. picture: This simulation helps us understand how we react to unusual driving circumstances on the road. 2010. Heureka Science Centre, Helsinki. (Photo: Andrea Kárpáti)

7.33. picture: Grandfather and grandson are discussing the results of the driving performance of the grandfather. It is an „educational moment" that can be used for sharing information about safe behaviour as a pedestrian, too. 2010. Heureka Science Centre, Helsinki. (Photo: Andrea Kárpáti)

Theatrical performances and film shows are standard features with both science and art exhibitions. Films are also projected in the halls as timed or continuous presentations. Cooke (2007) urges the use of educational and documentary films as supplements for tours because smartphones and iPads are able to project them in high quality. Anderson (2012), however, calls attention to the dangers of replacing authentic museum experiences with virtual substitutes.

Bishop (2007) encourages us to use 3D films and 4D displays that integrate film, live music and theatrical perform-ance, involving animals if it is staged in a museum of natural history. These events make use of a wide variety of multimedia applications for stage props or sound and light effects – though very many museum experts doubt their applicability in a scholarly institution. In fact, the borderline separating entertainment from edutainment is quite narrow. Experiments with the integration of show business technology in exhibition design are risky, but certainly worth the effort.

At the Museum of Modern Art (MOMA) in New York, many artworks are featured in documentary films that can be seen in the "Explore" section of the museum's portal. In the Multimedia section, interviews with curators, inter-esting background information about major works and exhibition previews are available.

7.34. picture: When entering the Nobel Museum in Oslo, Norway, visitors are led by a line of multimedia inform-ation panels showing the life and work of Nobel Prize laureates towards the centre of the hall where a continuous projection of documentary films enhance the experience.

The major ingredient of a successful multimedia application is the image, not the text. An *info kiosk* cannot be considered yet another panel to disseminate long texts of information about the exhibition. The ideal text size is 200 lines per screen, and, if there is film projection, two lines of information about the film. All the phrases that are not commonly known must be explained through a link to an online lexicon integrated in the software. (The knowledge level to target is that of the junior secondary school graduate – an average 14-year-old should be able to understand every word there is to be found on exhibition diagrams and labels. This requirement, however, is in sharp contradiction with the desire of every curator – to impress experts.)

7.35. picture: Home page for visitors with special needs at the portal of the British Museum.

7.36. picture: The National Media Museum in Bradford, West Yorkshire, UK, has a well-designed and informative home page for visitors with special needs. (Accessed on 26 June 2013).

If we intend to include long text in our multimedia information device, there should be a *„read aloud" option* and earphones to benefit from it. The agreeable voice of an actor can make even the driest scientific facts more digestible.)[6] Both text and sound should be made accessible for the visually or auditory impaired through magnifying and voice level increasing options. All video films included in a multimedia should have captions, preferably in English as well as the majority language of the country.

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[6]The author of this chapter first experienced this at the *Tut Show* in San Francisco in the 1970s, when the beautiful baritone voice of Richard Burton whispered the story of Tutankhamen, the young pharaoh, and his magnificent burial treasures into her ears through an audio guide at the Museum of Art.
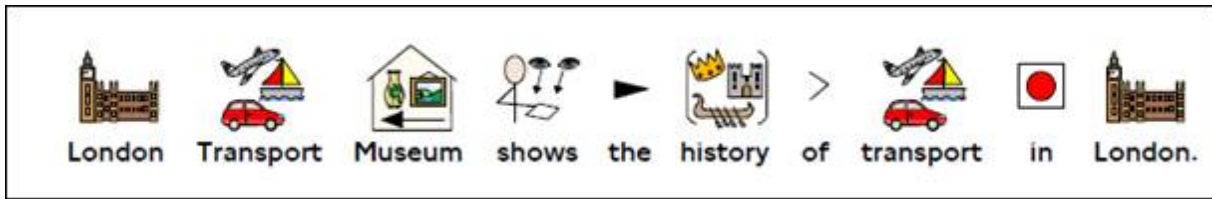
7.37. picture: Widgit symbols Museum of Transport in London, UK. The wide variety of resources intended to make visiting the museum easier and more enjoyable for visitors with special needs can be downloaded from the museum website so that visitors and accompanying persons can prepare for the tour. (More information about the Widgit symbol system.)

According to evaluators of multimedia applications, *personalised information* is more useful and enjoyable than even the most exciting facts and figures without personal relevance. (Piacente, 2001) An example: in the local museum of a town in Illinois, USA, there is a multimedia screen complete with movement sensor that activates an information system once you enter the hall presenting the history of agriculture in the area. The system has a face: a life-size farmer boy, who appears on the wall and asks you if you are interested in a list of topics he can tell you about and invites you to indicate your choice on the pushbutton console attached to the wall near him. If you don't feel like hearing him talk, you do nothing and after a minute he politely says goodbye, wishes you a pleasant visit and disappears from the wall. If you choose a topic, you can hear him explain in the cheerful dialect of the region, how corn, for example, was grown in the area. The life-size animation is an excellent example of the dissemination of personalised information and is, of course, very popular among visitors, as are some others summarised and presented below.

At the Mozart Museum in Salzburg family members of the great composer tell us about his life. In Springfield (Illinois, USA) at the Abraham Lincoln Presidential Library and Museum we can witness how the great man spent his days in his office and at home. An actor-narrator is surrounded by holographic images that help us experience decisive moments of the War of Independence and the anti-slavery movement.

7.38. picture: An example of the use of a personal object symbolising a well-known public figure as a unifying feature for all the products and publications about an exhibition: the top hat of Lincoln at the Abraham Lincoln Presidential Library and Museum Springfield, Illinois, USA.

7.39. picture: At the entrance, visitors are greeted by life size figures of the First Family. Proceeding further, all installations are personalised, using a wide variety of classic and contemporary means from dioramas to holograms and audio screens. Abraham Lincoln Presidential Library and Museum, Springfield, Ill., USA. (Photo: Andrea Kárpáti, 2009.)

7.40. picture: Virtual presentations complement traditional theatre performances at the Abraham Lincoln Presidential Library and Museum, Springfield, Illinois, USA. (Photo: Andrea Kárpáti, 2009.)

7.41. picture: An innovative use of holography – the actor and the hologram images interact in some of the scenes representing decisive phases in the president's life. Abraham Lincoln Presidential Library and Museum, Springfield, Illinois, USA. (Photo: Andrea Kárpáti, 2009.)

– Multimedia applications not only serve visitors, they also provide important feedback about visitor behaviour for the organisers of an exhibition and offer communication options during and after a visit. Some examples:

– Information about *images and documents visitors choose to send home* are documented by the interactive information panels;

– Emails are collected from those who want to benefit from the "send home" function. Thus, *messaging* to visitors about future exhibitions and events is possible;

– Through *quizzes and questionnaires,* the knowledge and experiences visitors bring to the exhibition is monitored;

– Portable digital guides are able to *track and document* (after prior notice) *visitor routes* through the display and provide data about places where they stop, the amount of time they spend in each part of the exhibition and the amount of information they are willing to listen to.

7.42. picture: At the entrance of a museum of natural history, beautiful examples of nature photography and documentary films encourage visits to the exhibitions. 2011. (Photo: Andrea Kárpáti)

7.43. picture: The Musée de Design in Paris introduces its collections through documentaries about the most important works of art shown in the displays. 2010. (Photo: Andrea Kárpáti)

When developing a digital information kiosk or panel, the following rules should be observed:

– Visitors should be *able to find the information they are looking for quickly* and without getting lost; the menu should be well structured, with return options to the main screen on each page;

– The *text should not be longer than 200 words* per screen;

– There should be *at least one image* (photograph, diagram, film clip or animation) *on each page*;

– *Most of the text should also be made available as audio* to assist visitors with poor eyesight or reading ability;

– For the same reason, furnish each page with a *magnifying option*;

– A *moving image* (film or animation) is always more effective than a still image;

– The *basic text should be comprehensible for lower secondary school graduates* (who have spent approximately eight years at school.) Additional information should be made available as an option through hyperlinks leading to more text, a lexicon or a museum database.
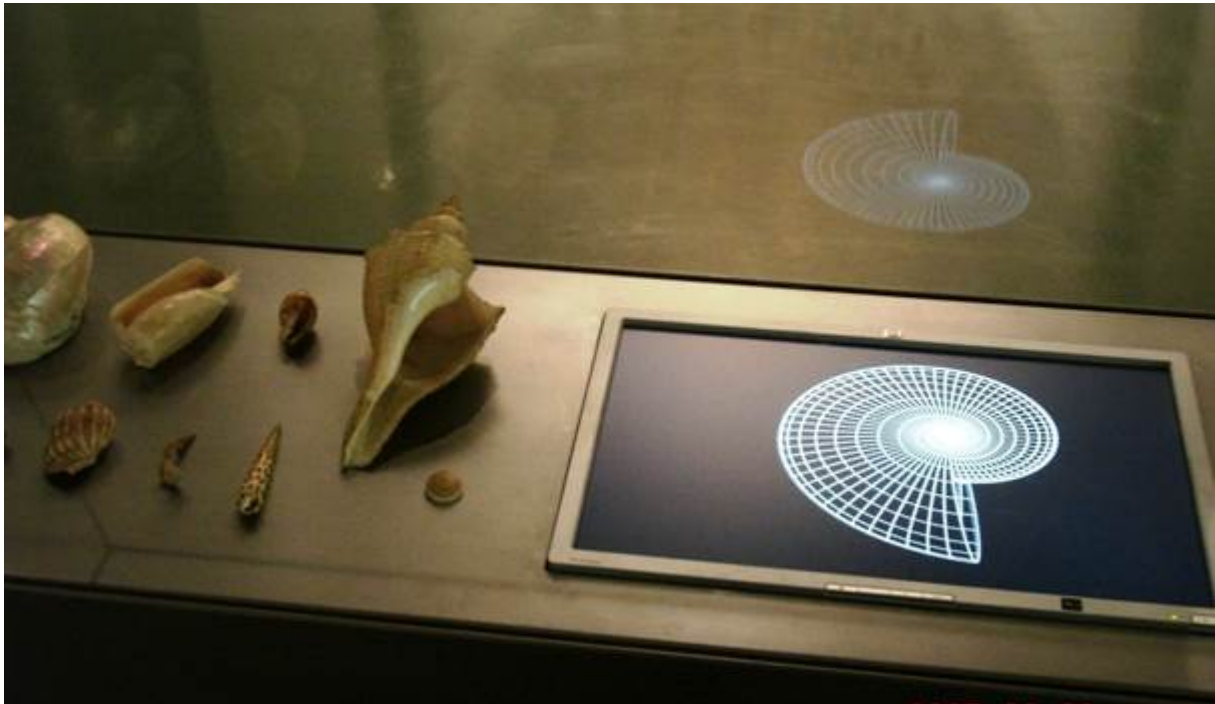
7.44. picture: Information about objects may be effectively presented through an animation. The image shows the structure of one of the shells. 2007. (Photo: Andrea Kárpáti)
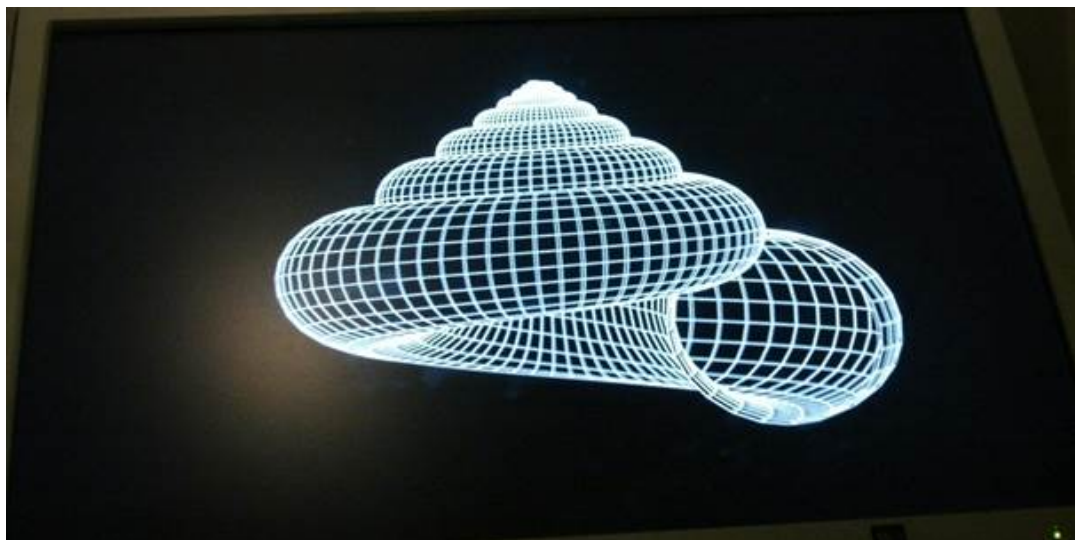
7.45. picture: The structure of a snail shell is shown through an animation. The result: a beautiful sight that also teaches a lot about the animal. 2007.(Photo: Andrea Kárpáti)

The two images above have an aesthetic appeal and draw attention to the possibility of using multimedia applications as exhibition objects, not just information devices. Examples of multimedia applications used as objects (of art) at exhibitions:

– 　 Touch screen table, Museum for Communication, Berlin, Germany

– 　 Diaporama,[7] Heineken Museum, Amsterdam, The Netherlands

– 　 Microsoft Worldwide Telescope and Universe Simulation

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[7]The *diaporama* is a large, divided screen with multiple slide projections. The individual slide sequences are synchronised to contrast with, or complement each other and create an artistic effect. Music often accompanies such displays.

Multimedia may be used as an edutainment device. Digital games, played alone, in pairs or groups, and much preferred by (mostly male) teenagers, may be furnished with content related to the exhibition and thus disseminate knowledge while entertaining young visitors.

A more intricate game needs a long playing time, therefore, many museums sell the DVD version of the games (or share them as a free service on their website) to ensure that players keep on learning about the theme of the display long after having left the exhibition.

7.46. picture: Digital version of a board game at the Heureka Science Centre, Helsinki, Finland, 2010. (Photo: Andrea Kárpáti)

7.47. picture: Creation of a mobile digital artwork. The girl standing in front of her friend with halo-like neon rays around her is moving her hands to change the colour of the lights that are connected to a movement sensor and a computer. „YOU – The Experience" exhibition, Museum of Science and Industry, Chicago, USA. 2009. (Photo: Andrea Kárpáti)

Digital entrance tickets

Bar codes printed on the entrance tickets of museums can be used as identification tags for data collection devices integrated in information kiosks and edutainment products. If a visitor scans the ticket at the reading device, his or her activities may be monitored (and used for improving the exhibition facilities) by the museum staff. Visitors using the "Send an email with picture!" facility (a very popular service) or a more generous offer by the museum to store several pictures and documents on a personal section of the museum's server for a while, identify themselves through their ticket. With interactive game consoles and quizzes, the bar code helps visitors obtain a personal record of their achievement.

Information submitted and attached to the bar code is entirely voluntary – visitors are welcome to use a nickname and may deny submitting a valid email address. Still, if they trust their museum and want to stay in touch, they furnish the institution with valuable data about visitor interests, previous knowledge and activities at the exhibition. For visitors, identification has its benefits: they may accumulate a wealth of personally relevant information as an exhibition souvenir, obtain an assessment about their knowledge and skills and receive first-hand information about programmes and future events that are likely to interest them. Therefore, a digital entrance ticket helps them enter into deeper contact with the museum – a connection that has the potential to enrich their life.

7.2 Museums on the Internet

– The virtual presence of museums may involve a variety of forms, differing in their technology immersion but similar in their appeal to (potential) visitors. Some options for the *digital museum* are outlined below.

– *Online museum, electronic museum, cybermuseum or Web museum*: they only exist in virtual space and have no tangible collection. They disseminate either digital copies of works or works that were conceived in a digital medium (for example, works of graphic art or visualisations.) Some of these collections are the products of one individual (not an institution or association like most traditional collections are), and/or may be contributed to by individuals who can upload their own creations or photos of their objects. (In traditional museums, only a few se-lected collectors can display their possessions on special occasions.)

–   *Digital museum*: the internet-based version of a collection that exists in the real world.Digital images of some of its possessions are generally available on CD and DVD, as well as the website of the institution.

–   *Hypermuseum:* this shows works that only exist in the virtual space. Some of them were created in one digital medium (like photography and film), others use a variety of different media formats (like the multimedia works using still and moving image, sound and text.) These museums disseminate *net art:* collective creations of artists living in different parts of a country or the world, and communicating through collaborative, internet-based ICT applications.

–   *Museums in virtual reality*: collections situated in digital microworlds like Second Life. They may be "copies" of real institutions or original, digital spaces – in any case, they create an environment for presenting art, just like their counterparts housed in classical or hypermodern buildings.

7.48. picture: A museum in Second Life that tries to replicate the spatial atmosphere of a real world institution: Virtual Museum Dresden. It gives an impressive overview of the Gemäldegalerie Alte Meister (Gallery of Paintings – Old Masters), one of the world's most renowned art collections of painting and sculpture from the 15th to the 18th century. In May 2007, this collection became the first virtual museum in Second Life, modelled on its archetype in real life true to scale.

7.49. picture: Page from the digital site of the Smithsonian Museum, Washington D. C., USA. See the Panorama images of the museum collections here.

Characteristics of the digital museum:

> Duplication and extension of reality, recombination and personalization, and interconnection are elementary applications of the concept of virtuality to the museum, since they simply enhance the virtual component that is inherent in the nature of museums, rather than empowering the interaction among their different dimensions (physical, cultural *and* virtual). In summary, they can be described as follows: (a) the opportunity of extending reality through the duplication of the museum objects, *i.e.* new forms of accessibility and new ways of communication; (b) the opportunity of maximizing and recombining information by following personal paths, *i.e.* new forms of knowledge construction and personalization; (c) the opportunity of interconnecting contents over the Internet, and consequently museum objects themselves, *i.e.* new spaces for display and collection. (Giaccardi, 2004)
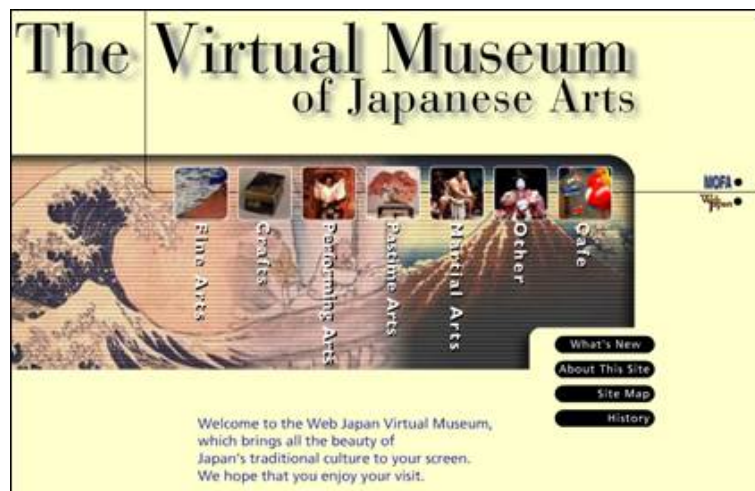
7.50. picture: A The Virtual Museum of Japanese Arts

One of the major centres for educational multimedia development is the *Media Laboratory* of the Massachusetts Institute of Technology, MIT). Euromuse.net is an important European professional community for the development and evaluation of exhibition multimedia. DigiCULT is an international portal that disseminates news about projects in ICT and museum learning.[8] The American National Institute of Standards and Technology of Virtual Museums

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[8] The main homepage of *DigiCULT*: http://www.digicult.info/pages/index.phpthe . The English language version of its Italian twin portal: http://www.digicult.it/en/, and another related site from Canada, that collects museum project results: (http://sunsite.ualberta.ca/Digital_Collections/museums.html).

organises conferences and issues publications about digital (and partly virtual) *museography* (the theory of museum development). This association organises the most important annual conference of this field, Museums and the Web[9]. Upcoming conferences may be accessed through its Conference page.

An online virtual exhibition can have substantial scientific value. For example, the French Ministry of Culture disclosed a very important archaeological discovery, the cave paintings in Vallon-Pont-d'Arc from the Palaeolithic period, using a virtual museum application and thus presented the attraction, which otherwise was not yet accessible for visitors.[10] Virtual museums are accessible at anytime for anyone who knows the web address or finds it while browsing the internet. This technology helps us realise the dream of André Malraux, who described his imaginary museum but could not show it. (Malraux, 1960)[11]. Some of the benefits of a virtual museum for the visitor and the museum staff are described below:

– It supports the *safeguarding* of fragile objects that cannot be exhibited for a long time or not at all. Although taking a digital picture or scanning also involves some risks, through digitization, they can be shared without further damage.

– It *extends our vision*: its magnifying option makes the barely visible details of a work of art (or an insect, a machine, etc.) observable. In many digital museum environments, we can also turn an object around virtually and view its interior or marks on its base.

– Curators can assemble *objects that would never be seen side by side*, thus generating valuable learning experiences.

– We can provide a vast amount of *supplementary information* directly attached to the label of a work of art digitally exhibited. For example, we can link films about the natural habitat of an animal, lecture notes about a much-disputed master, further collections of digital images related to the work just shown that visitors may access if they want to, and easily return to the virtual museum site after the detour.

There are many topics of general interest that cannot be exhibited in any other manner than virtually. An example: the German Foundation for Bacteriology maintains a virtual museum site in co-operation with the Society for Applied Microbiology. This well-constructed digital space, which also houses a collection of documentary films (for example, about epidemics), serves as a portal for reliable scientific information about bacteriology research.

Concepts like freedom or revolution are not easy to represent through an exhibition. (Although, as we could see at the Solidarity Museum in Gdansk, Poland, pictured above, it is not an impossible task.) The virtual museum of the Chinese Cultural Revolution intends to represent a concept and a series of events related to it through still and moving images, plus interpretive as well as documentary texts. The site invites us to evaluate events as well as remember the loss of human life and cultural treasures.

Virtual technology may enhance real life experiences. The three-dimensional representation of the cathedral of Amiens, France, and its „zoomable gallery" where works of art can be seen from close-up, provide a perspective that visitors to the huge architectural monument would never experience.

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[9]The portal with congress proceedings and other publications of the association is called Archives and Museum Informatics. Its Research Forum is an excellent resource for developers and museum staff who commission digital applications.

[10] Virtual museum of cave paintings from the Palaeolithic period, Vallon-Pont-d'Arc, France.

[11]*The Imaginary Museum* by André Malraux (1960) inspired several authors to discuss virtual museums. Here is an interesting essay on the subject: From Malraux's Imaginary Museum to the Virtual Museum, by Antonio Battro, 1999.

7.51. picture: Virtual reality technology used for the documentation of a work of art: 3D representation of the Amiens cathedral.

"The Secret Niche On The Internet" is the title of a virtual tour of the Anne Frank House in Amsterdam, The Netherlands. Besides showing the historic building in great detail, it also provides a big collection of related images and documents. Video films, animations and photo collections may be viewed more peacefully sitting at one's own computer than standing (in line) at an information kiosk in the museum. The application also contains very effective multimedia features: objects in the room of Anne Frank tell their stories through the voices of actors.

Museums are also present in Second Life, Visuland and other virtual worlds. In the first decade of our century, such applications were very popular (and so were these sites), and many important collections found it necessary to be present in these much frequented digital environments. Functionalities provided in virtual worlds (like the ability to fly and thus see the roof or the frescoes on the ceiling of a building) provided new possibilities for visitor experience.

7.52. picture: The virtual version of the Guggenheim Museum, New York, USA in Second Life

7.53. picture: In Second Life, everyone can produce his or her imaginary museum.

7.54. picture: In Second Life, avatars (digital personifications of users) can fly and access the frescoes on the ceiling, The Last Judgment by Michelangelo, from close-up.

The Louvre Virtual Tour provides visitors with panoramic images of 21 halls of the museum. Four exhibition sites are featured in three-dimensional (3D) version. It also has a "Let's see the painting from close up!" option with 12 works of art shown in great detail. Visitors can virtually walk through the hall and get close to an image in a way they certainly cannot at the real exhibition. To meet public demand, the Louvre has also produced the "Da Vinci Code" virtual tour.[12]

Digital publications of museums

Digital technology offers intelligent approaches for granting different rights of access to content stored in databases, and these have become increasingly important means of knowledge distribution. In the European Union the most important international project for the collection and distribution of cultural heritage is *europeana*, a project that will open its vast database to the public as a freely accessible resource in 2014. The aim of this project is to identify and digitize, document and share objects of artistic and/or historic value that the European cultural community should be aware of. Alone from Hungary, about 150,000 items will be included in this repository. Images of objects will not be printable in books; high resolution copies will remain in the possession of the museums that store them. The blog of *europeana* has several interesting pages that may be used as examples for museum blog development:

– Behind the scenes: new results, events and plans of the *europeana* project.

– Content: descriptions of the works of art in the database.

– Europeana 1914-1918: blog entries about the collection documenting World War I., a truly all-European experience.

– Feature story: an important event in connection with the database that has relevance for the calendar day.

– europeana: interviews and interesting facts about the project staff.

– Ministers on europeana: high-ranking officials discuss the importance of this pan-European project.

– Musings: authors of the blog share impressions about their life and new ideas.

– Technical issues:development of database technology and ideas about the use of the resources from information technology experts.

– Competition: quizzes and quests about important events in the life of the European Union.

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[12]This tour shows some of the venues of the crime story and thriller by Dan Brown, „The da Vinci Code".

Problems concerning the development of digital museum archives and other forms of databases:

– Good *data management software* is hard to find and very expensive to order;

– *Data stored are not used extensively*. There are few instances of regular utilisation for education, tourism, heritage campaigns etc.;

– *Maintenance and further development* of existing databases is an unresolved (financial and human resource) issue for most museums;

– *Few IT specialists* possess the knowledge and skills necessary for developing a useful museum application as their training prepares them for industrial and commercial software development;

– *Collection of metadata is badly managed* in most countries. There are some parallel developments, while whole areas that should be included in (inter)national repositories remain undocumented;

– *Database software applications are not always compatible with each other*; therefore, it is difficult to exchange metadata among institutions even in the same country;

– *Data records are labelled and tagged differently*; thus it is often impossible to create even national networks of museum collection data.

An excellent example of a digital publication about treasures kept in museums is the *Natural Europe Project*, which also documents and shares information about natural attractions and world heritage sites. Participating museums of natural history and science centres connected their image databases with each other and with the *europeana* repository. *Mundaneum* is also an important resource for learning in museums as well as research, because it stores digital publications issues by museums (many of which are difficult to retrieve from elsewhere) and research papers related to collections, complete with moving images and animations that could not be published in traditional, paper-based journals.

One of the largest image and text database for art history is stored at the J. Paul Getty Museum and Research Institute. In the beautiful group of buildings designed to suit the requirements of nature-friendly, energy-saving architecture, the collection, storage and distribution of information about the objects are equally important. The Archives of the J. Paul Getty Foundation offers one of the world's largest collections of journals and publications about art history and criticism relating to works of the last and present centuries.

7.55. picture: The J. Paul Getty Museum and Institute of Art, Los Angeles, USA. 2013. (Photo: Andrea Kárpáti)

7.56. picture: An exhibition specially designed for children. The multimedia application, a giant touch screen, introduces children to the world of illuminated, medieval Arabic manuscripts. J. Paul Getty Institute of Art, Los Angeles. 2013. (Photo: Andrea Kárpáti)

Museums were among the first institutions appearing on the web, but their pioneering efforts were coupled with the wish to show the traditional image of a distinguished, scholarly institution. During the last decade, home pages changed dramatically and by now, they have become knowledge portals, multimedia art showcases and educational facilities, not only advertisements of current events. Most museums should have the following **home pagemenu points**:

–   Access and opening times

–   Services for visitors (accessibility, guided tours, digital guides, downloadable maps and flyers, etc.)

–   Description of the collection

–   Information, downloadable images and text about permanent and temporary exhibitions

–   Events accompanying temporary exhibitions

–   Regular educational events and activities

–   Invitation to become a Friend of the Museum, a sponsor or a volunteer.

Virtual museums

Some home pages have additional services that facilitate the preparation for a visit. Before, we mentioned virtual museum tours, now we only list a few additional examples of the virtual extension of museums integrated in their home page. The *Smithsonian National Museum of American History* has a very informative sub-portal about its exhibitions, with panorama images showing many of the halls. At present, 34 exhibitions of the Smithsonian can be accessed in digital format on the web. On the map of the (digitized) museum, an icon shows if we can have a more detailed image of the object on our screen. The *National Aeronautics and Space Administration*, *NASA*, has created an animated, interactive sub-portal on aeronautics for its home page to commemorate its 50th jubilee. Here, a robot offers to be our guide through the digital exhibition. More and more museum databases are furnished with intelligent search functions that remember our past activity and offer information that might be of interest to us. An example can be used on the home page of the Italian Computer Science Museum.

An excellent educational portal that museums may wish to integrate in their virtual museum site – since it may support science and technology museums in particular – is the dissemination of knowledge about science being developed by the Open Science Resources (OSR) project. Museologists and explainers are part of the project team. Their objectives and accomplishments are outlined below.

> "Introducing the latest discoveries is an ongoing challenge for teachers and students alike. Increasingly, scientists are being asked to talk about research with different non-scientific audiences. The OSR stimulates virtual science communication which encourages these two groups to exchange knowledge, experience and educational needs. The OSR Repository includes many images of exhibits and scientific instruments, animations, videos, lesson plans, student projects and educational pathways with guidelines for interactive museum visits. Toolbox equips researchers with everything they need to prepare lessons and share this material with others working in their field. One of the portal's most innovative features is its social tagging system, which makes it possible for users to engage and share experiences with education and collection staff in participating science centres and museums. Social tagging also allows users to assert their own connections and associations between objects and phenomena to reflect personal perspectives and interests. In so doing, users re-discover previous activities they have performed, record salient characteristics of personal interest and support subsequent searches on the OSR portal." (Online interview with Jennifer Palumbo, Ecsite Projects Coordinator in ESCITE Newsletter, 2012,)

7.57. picture: Introductory page of the Open Science Resources (OSR) portal.

Reproduced below is a **list of questions for virtual museum developers** (and museum staff collaborating with them), which ought to be answered before launching a project.

> "(...) the "historical" challenges for the creators of virtual museum can perhaps be best summed up as a series of questions:
>
> –   Public or private: should a virtual museum be addressed to the home user or the museum goer or both? How does this affect the design?
>
> –   What is the role of tactility? Can tele-tactility replace the physicality of touch?
>
> –   Push buttons and peep holes: are these still valid interfaces? What else is needed?
>
> –   How does one maintain user involvement without turning it into a goal in itself?
>
> –   What role does creating "a total atmosphere" play? Are there any alternatives?
>
> –   How does one make a distinction between a museum exhibit and an entertainment application?
>
> –   Is there a need for distancing the user, at least sometimes? When and under what conditions? For what purpose?
>
> –   Is there a limit to the "multisensory overload" in exhibition design? How many information channels can be added without causing confusion and miscommunication?
>
> –   How should physical museum relate to virtual ones? Can a virtual museum be merely a replica of the physical one, or should it be something radically different? What?
>
> –   Can all location-based exhibits be replaced by virtual ones? Is this a viable goal?
>
> –   How important is user interaction? Wouldn't it be good to try to do without it, at least sometimes? What would be the consequences of non-interactive virtual museum design?
>
> As an institution, the digital and "wired" virtual museum is still in the earliest stages of its development. As a consequence, the key questions to ask will certainly change, and new ones will be added to the list. Much will depend on the development rate and the spreading of higher speed Internet connectivity to everyday consumers. However, solving problems of routing and data-transfer is not everything. Our modes and routines of communicating and interfacing with multimedia databases are cultural, historical and ideological issues as well. Considering precedents from the non-digital eras – covering most of the history of mankind so far – should not be neglected. (Huhtamo, 2002, p. 14)

The virtual museum, as a genre, has never been more authentic than in the 21st century, the age of virtual encounters. A popular art form, *networked art*, an act of collective creation, may symbolise the new work and leisure space characterised by intensive online presence.[13] In cyberspace, museums can capture the attention of people who would normally not consider entering a museum, and also serve the goals of equal access to cultural treasures. Below, we summarize research challenges that will influence the future of virtual museums.

–   *Visitor-friendly virtual spaces:* in order to be able to tailor the functionalities of a virtual museum to the needs of its future visitors, we have to see who these visitors will be: only under-thirty *netizens*,[14] or their parents and grandparents, too? Laypeople to be informed about the basics, or experts in search of in-depth information?

–   *Museum mood:* can we virtually recreate the feeling of sincere appreciation and humble astonishment that we experience at the sight of unique creations of nature and mankind?

–   *Multisensory experiences:* now that multimedia is the norm, and 3D applications are being used more and more frequently, what sort of sensation will have to be added next? Do we have to plan for virtual museums that offer tactile experiences? (Real institutions rarely do – but the inclusion of another sensory organ in the virtual experience may further justify its use!)

–   *Activating our visitors*: users of microworlds and edutainment applications are no passive consumers of information. They require high quality interaction – but do they have enough knowledge and experiences to get engaged with museum related virtual applications? If not: how can virtual exhibition spaces promote their education?

–   *Entertainment and education:* what are the good proportions? Which is the major function of the virtual museum, and how to integrate the two? We have mentioned "Disney-fication" as a major threat for all museums going online. Using current ICT products and usability studies of existing virtual spaces, producing valuable edutainment solutions which are suitable for projecting the identity of museums is a challenge, not a mission impossible.

–   *Cognitive overload*: how much information can we take in without fatigue or boredom? How can we avoid a chaotic flow of images and words and structure them into digestible units of information? Virtual museums have to be designed the same way as school curricula are.

–   How can we *integrate the real world museum and its virtual alter ego*? Should they be radically different (the same way as their medium of existence is), or similar, so that the one should naturally blend with the other? Most museums choose the second option.

–   *Are there virtual-only functionalities?* A lot has been said about the impossibility of replacing the real experience with the virtual – but are there experiences that cannot be offered any other way than virtually? We have repeatedly referred to examples when works of art were shown in more detail than the eye can behold, or for a much longer time than possible in a museum space. Another example: *polyaesthetic* experiences – connecting visual arts with music and theatre – are available for a limited time to a small number of people at the events of a real world museum, but may be available for all in its virtual counterpart.

Virtual museums offering interconnected sound and image collections may provide an information-saturated, rich knowledge space. The Virtual Museum Canadaportal offers such an interdisciplinary exhibition, based on the photo collection of the McCord Museum in Montreal, entitled *Urban Life Through Two Lenses*. The exhibition includes 34 pairs of images, in which one of photo pairs was taken 150 years after the other. While looking at the same spots in the city shown in two very different historic settings, we hear the sound of the contemporary environment, like boots tapping on the cobblestone pavement or an automobile engine just starting.

Virtual museums are growing in number – but can every potential visitor make good use of them? Through computer generated environments that combine various forms of augmented reality, museums (and many other educational institutions) have started to develop immersive environments for presenting their collections. This type of immersive learning has a valuable role in motivating and empowering students to learn about art, history and even about culturally relevant objects that are no longer in use. However, navigation in cyberspace may make some individuals disoriented and frustrated due to difficulties of finding a sub-page or returning to a site seen before. Research indicates that to navigate successfully, users should rely on *spatial navigation skills*. They must plan their movements using a spatial frame of reference. Virtual museums, therefore, are places where spatial ability has an impact on

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[13]See examples of networked art on the page for winning entries of the Internet of Things 2012 competition.
[14]Netizen or member of the Net generation: terms used for under-thirty, frequent internet users.

performance. According to a study that investigates the interaction of spatial abilities with two-dimensional and virtual tour applications, we need considerable skills in order to manipulate in virtual space. The study compares the extent to which spatial abilities facilitate users' navigation and engagement with the museums and finds that users can be successfully coached and supported if their abilities fail them when finding their way through virtual space. (Katz and Halpern, 2013)

7.3 Museums on the Social Web

The Social Web or Web 2.0 differs from its predecessor in its empowerment of the user. While Web 1.0 offered content created by professional developers and distributed with the help of (mostly) commercial agencies, Web 2.0 invites all its users to participate in the creation and dissemination of content. The Museu Picasso Barcelona has a virtual museum and a variety of social web applications integrated with it. Here, visitors can post comments about exhibitions and programmes, offer their support for campaigns and volunteer to help run events. The site also invites users to contribute images, stories and accounts of experiences related to displays. Discussion forums are opened to see how far visitors agree with the messages of certain installations. The portal reaches far beyond the walls of the museum presenting the works of the most reform-oriented master of the 20th century, and activates a large community of friends of the arts all around the city.

Museum blogs

Blogs differ from ordinary museum home page entries in their personal voice and current nature of the information shared. The most frequent type is the *curator blog,* offering insider information about the conception, development and realisation of an exhibition. Other museum-related blogs are written by professional and amateur critics. Here are some good examples:

–   Museum 2.0, international blog on museum informatics

–   British Museum blog, London, UK

–   Kunsthistorisches Museum blog, Vienna, Austria

–   Computer History Museum blog, Mountain View, Silicon Valley, California

–   Cultureshutdown, subtitled "Solidarity with Cultural Institutions Under Threat", a blog about organising campaigns to save cultural institutions threatened by closure.

Museum tweets

Twitter is a messaging facility that enables you to send short messages of maximum 140 characters to mobile phones or PCs of friends (or strangers, who, for one reason or another, have decided to follow you.) The tweeting facility is available in 20 languages and enables you to attach photos and include web links in your message. Museums use it to quickly reach their core audience and inform them about events, publications, new acquisitions or displays. If you start following a museum, you will never miss an event – provided the institution has enough personnel to cater for its Social Web applications. Here is a list of information that museums should definitely tweet about;

–   *Date, time and venue* of an opening, or other important event, with the link to the website of the exhibition;

–   *New acquisitions:* exciting news about the scientific importance, market value, insurance figures and viewing options in relation to a newly acquired object*;*

–   *Cultural programmes and special tours organised on the day of the tweet* or the next day (because tweets have a very short shelf life, they can be overcome by new messages);

–   *Events related to the exhibition and organised by another institution* or the community where the museum is located;

– *Special events and workshops for young visitors* (evidently, Twitter and Facebook are the best messaging options for them);

– *Publications:* title and link to their contents or downloadable version (newsletters, catalogues and books related to exhibitions may all be advertised through tweets);

– *Urgent messages* such as sudden closure because of repair, irregular opening times during holidays or an unexpected break;

– *Opening of a new facility* (a new unit, a workshop space for children or a new restaurant interior are all good reasons to tweet an invitation to try and test);

– *Exciting souvenirs in the museum shop* (a welcome tweet before Christmas or Valentine's Day!).

Museums on Facebook

Managing a home page requires monthly maintenance. Maintaining a blog, sending tweets or being present on Facebook, is, however, a daily activity. Smaller museums with no PR personnel should delegate this responsibility to staff members who use these sites in their private lives anyway and are sensitive to audience requirements regarding up-to-date, interesting and relevant information. Curators and researchers should also be involved in producing „Facebook compatible", concise, illustrated entries that contain information that the visitor group regularly using Facebook (those under 30) will find worthwhile to read. The menus of Facebook offer the following options for sharing museum-related news:[15]

– *Followers* who decide to „like" us on Facebook are a good indication o the popularity of the museum among the users of the page. They will see our entries on their page and there is a high probability that they will actually read them, too;

– *Groups* may be organised to target followers with special interests and create communities around the museum that have the potential for self-organised activities;

– *Events* can be organised quickly and with no cost. Prospective participants may join and thus inform us about the visitor group interested in the event from among our Facebook followers. If they return to our event entry (because we send a tweet with a link to the relevant Facebook page as it is approaching), they can see who from their friends is planning to participate and may decide to use the event for socialising and join, too;

– *Entries* may include news items, similar to those we share through Twitter, but with more details and links;

– *Images* can be used as teasers: organised into a timeline, they can provide prospective visitors with appealing information about a collection in a second.

QR and AR codes

QR (*Quick Response*) codes are signs that contain a link to a web site and can be scanned by most mobile phones, not just smartphones. Their visual form can indicate the theme they will lead us to, or be just a decorative pattern. Museums mostly use these codes at the entrance of their exhibitions to guide us to the home page of the exhibition or – a much better idea – to a downloadable museum guide application that we can use during our visit. Some museums share images and flyers through QR codes placed near an installation. Others provide longer labels, containing documentary photographs about the place of origin, the restoration of an object or related pieces in the collection through a QR code-embedded link.

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[15]An example of an active and well-designed Facebook page: Museum of Fine Arts, Boston

7.58. picture: A visitor uses his phone to read a QR code at the Museum für Römische Geschichte (Museum of Roman History) in Hamburg, Germany.

AR (*Augmented Reality)* codes contain three-dimensional images. An example: through an AR code, the 3D image of the Notre Dame cathedral in Paris, France, can be seen on the screen of our phone.[16] We can also produce AR codes of reconstructions of buildings or works of plastic art and place them near showcases where remnants of a building or sculpture are presented. In this way, visitors can see works in virtual space as they once looked in reality. They can virtually turn them around, view them from above and at the same time appreciate the fragments in front of them that are remaining parts of an impressive work of art. Many visitors find it difficult to enjoy such a reconstruction if it is presented as a linear drawing only. In this case, virtual reality enhances the real-life experience through supporting our imagination.

7.59. picture: QR code of the Mona Lisa QR – a work of digital art. Source: Blog entry about the necessity of QR codes in museums

Task 1:

– Visit an exhibition, and then see its extensions in virtual space. Are you satisfied with the way it is presented on the museum home page, on Twitter and Facebook, and in a blog environment?

– If so, write a review about the display, using these digital resources. Make it look like a blog entry: include links and at least one image related to the exhibition. Include an evaluation of the successful digital representation of the exhibition, highlighting good applications and content that other museums may find useful as an example.

– If there is no such virtual extension or if it is not suitably represented, design the virtual presence of the exhibition. Write five Twitter entries to be used during the week leading up to the exhibition; create two blog entries about related topics and develop a Facebook site that will offer inviting entries and events for encouraging young people to consider a visit.

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[16] Review about the utilisation of the QR code in the Notre Dame Cathedral in Paris.

Task 2:

Choose an interesting building or sculpture (a historic monument or an exciting modern work of art) near your home. Imagine that the local community intends to furnish it with locative technology that will make passers-by stop and encourage them to appreciate the work more than before. What sort of music and other sound effects, text and light would you use, and why?

Write a grant proposal about the realisation of this project, including a cost estimate. (Browse the internet for costs of movement sensors, and the sound and light devices you will need.)

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Chapter 8. Communication about exhibitions

Public relations activities of museums are among the most important communication forms of a museum. Communicating about exhibitions is in the centre of this activity. This chapter gives a brief introduction about the channels of communication about exhibitions inside and outside the museum. We describe how posters and flyers should be designed; show some examples of souvenirs that contribute to the message of the museums and other that are less successful; we discuss propaganda issues in the press and in traditional and digital audiovisual media. Finally, we indicate how museum education may contribute to the successful communication of an exhibition.

8.1 Communication about an exhibition within the walls of the museum

(Tamás Vásárhelyi)

The message of an exhibition should be transmitted both to the staff of the museum and to visitors. In this part of the chapter, we deal with both of these tasks. In a larger museum where only some of the staff members are involved in the design of an exhibition, it is highly important to clearly explain the conception and development of a new show to all staff members. Their attitudes towards the new project may influence the work process, and they are also important „PR agents" of the exhibition as they spread the news among fellow professionals from other museums as well as friends and family, and thus contribute to pre-opening communication.

Information for visitors should use all available channels – also inside the museum. Many tourists pay a visit because they have heard about the institution and intend to see the permanent exhibitions only. If the news about the temporary ones is spread all over the place, they may be interested in completing their visit through seeing one of them.

Posters on the inside and outside of the walls

It is not enough to list the temporary show in the ticketing options around the cash desk. Nowadays more and more museums use large posters hung on their walls, huge canvases above their entrance and even signs on the pavement nearby to indicate that something new and peculiar is there to see. In the reception area, posters should briefly explain why it is worth the extra ticket to see the temporary show. Information kiosks and folding screens as well as so-called „stopping boards" (large notice boards in the way to the exhibitions) may act as teasers.

8.1. picture: Advertisement inside the Victoria and Albert Museum, London. (Photo: Tamás Vásárhelyi)

8.2. picture: Banners advertising a part of an exhibition. Victoria and Albert Museum, London. (Photo: Tamás Vásárhelyi)

Flyers inside the museum building

For many exhibitions, short information materials (flyers) are prepared with a brief description and visitor information about the show and some images of the works exhibited. These should be placed near the entrance, the ticket booth but also near the exit, to take home by those who have not noticed them before. Some of these flyers contain a floor plan and are meant to be used during the visit. Museum educators can make good use of this feely available document through the inclusion of an easy task that can be done during the exhibition and submitted at the exit for a competition prize or taken home as a reminder. Such a quiz or brief quest may involve visitors deeper into the viewing experience than a normal stroll through the halls could. (Other information materials like the catalogue, brief guides for different age groups and other materials produced in connection to the show also serve similar purposes but will not be discussed in this book.)

Exhibition souvenirs

If you can find a sponsor who will finance some exhibition related products in exchange for some PR services or a partner who produces and sells souvenirs that are related to the exhibition, you can develop a range of products that transmits the message of the museum successfully and offers visitors a lasting memory of their visit. Products sold in the museum shop or at desks near the exit of a contemporary exhibition should be in harmony with the style of the museum. Items that are meant to be humorous may be inconveniently grotesque when presented at a museum (for example, the one-eared mug with the portrait of Van Gogh[1]). The most frequent souvenirs with images of major works at the exhibition are key holders, magnetic stickers, calendars, puzzle games, colouring books, shawls, ties, bags and T-shirts.[2] These products have a significant PR value because most visitors will show them

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[1]Van Gogh cut one of his ears off during a rage caused by his mental illness.
[2]Blog entry about museum souvenirs in Hungarian, with images anyone can understand: http://hg.hu/blog/14960-tanacstalan-t-rex-muzeumi-kabalafigura-lett

to friends and family members that may be motivated to see the show themselves. Exhibition guides, task sheets, quiz booklets and other educationally relevant printed materials may also act as a souvenir.

8.3. picture: Useful museum souvenir: an archaeologist's kit. In the box, there is a leaflet describing the work of an archaeologist team, from defining the location of the excavation to the restoration of the finds. Athén, Parthenon Museum, 2010. (Photo: Andrea Kárpáti)

8.4. picture: In the birth house of Has Christian Andersen, figures of the Ugly Duckling and other protagonists of his tales are offered as a souvenir, along with the toy figure of the famous Danish author of tales and his books in many languages that visitors may browse. Lyngby, Andersen Museum, 2012. (Photo: Andrea Kárpáti)

8.5. picture: At the exhibition of the last, religious works of Andy Warhol, puppet figures of the painter and Jesus Christ were offered for sale in the museum shop… 2009. Milwaukee Museum of Art, Wisconsin, USA. (Photo: Andrea Kárpáti)

8.6. picture: „Pop-up Magritte": at the Magritte exhibition in Vienna, we could purchase some of the most famous paintings of the artist in three-dimensional form, as a pop-up book. Albertina, Vienna, Austria. 2011. (Photo: Andrea Kárpáti)

8.2. Communication outside the walls of the museum (Andrea Kárpáti, Tamás Vásárhelyi)

Today it is evident that even the best product needs advertising. Here we do not go into details about the phases and procedures of an advertising campaign; we only present a few good examples from the field of museum communication. Creativity of developers is often restricted by limited funds; still, many of the routine solutions cannot be blamed to this factor alone. The most obvious mistake museum PR specialists commit is the disregard of the audience segments that they have to target. Campaigns will never be able to reach all potential museum visitors – they have to be dedicated to one or a few special groups characterised by age, educational level or special interests.

Posters in public environments

(Tamás Vásárhelyi)

The most frequently used advertising medium is the poster. If we have funds, a giant poster placed at a busy junction is among the most effective ways of calling attention to an exhibition – and through this, to the museum, too. Such a huge expense can only be justified if the show has the potential of becoming a blockbuster (for example, because it exhibits major works of art or exciting – and understandable for many – new results of science, or is organised to commemorate an important historic event in the life of the nation). Smaller posters can be placed on many other surfaces, than walls of houses. For example, passengers of a metro line will (have to) stare at our poster while ascending and descending the escalator or travelling in its carriage. Buses and trams may also be used as moving poster boards, too. In every town and city, there are advertisement surfaces for hire at busy junctions and on the highways. Museums rarely make use of these options, although their "product" is much more pleasing to look at and at least as exciting as a new brand of coffee.

Museum staff members who are in charge of commissioning these posters, often perceive them as yet another surface to publish long texts about the exhibition. Most of them have one work of art in the centre (the curator's

favourite that, unfortunately, is not always good for viewing from a distance or catchy enough to make passers-by notice and stop to read about. The style of exhibition posters is decently elegant – however, the genre itself demands louder, more striking visual solutions. Different locations and audiences demand different messages and images on a poster to be effective enough to be worth the expense and time devoted to their development. For example, different messages can be transmitted on a busy street for all pedestrians than at the museum, where only those people come who have some sort of interest for the institution. Also, schools welcome special posters that can double as educational materials.

8.7. picture: Exhibition posters about the opening of several shows seen in an underground tunnel and at the Hungarian Natural History Museum, Budapest, at the opening of its new wing in 2004. (Photo: Tamás Vásárhelyi)

8.8. picture: Vitrines on the wall of the Natural History Museum, London, guides visitors to the entrance and provides useful information „on the go". (Photo: Tamás Vásárhelyi)

The sign that calls attention on an exhibition can be a normal traffic sign that indicates a museum or historic monument, a special sign at the side of the road, or a banner. Visitors to the open-air museum in *Szentendre*, Hungary, will be guided right to the entrance through a variety of signs, some of them with schematic images of the *Skanzen*, that also indicate how far there is still to go until we reach this institution apparently waiting for our visit. In Munich, at *Isartor*, the underground station closest to the *Deutsches Museum* („German Museum" that houses exhibitions about the history of science and technology), there are decorative panels on the walls about professions in these areas. The exit to the museum has a similar decoration. Another underground station features copies of sculptures to indicate that three art museums are housed on and near *Königsplatz*. In Paris, several metro stations are named after the museum they are close to (for example, *Louvre*).

8.9. picture: Out of five information panels next to each-other, four calls attention to the Open-air Museum of Szentendre, the Hungarian Skanzen. (Photo: Tamás Vásárhelyi)

Museum flyers

(Tamás Vásárhelyi)

Flyers are among the most important (and also most frequently used) information materials. Those who access them learn about the issuing museum and, even if they will not turn up this time, they may come to see the attractions that the flyer indicates at some other occasion. If the flyer is nice or exciting, it will certainly be picked up, taken home and shown others – therefore, it reaches much more viewers than the number of copies printed.

Therefore, a good flyer does not only inform, it also acts as a teaser. It may have many formats, but the most frequent one is an A/4 sheet printed on both sides and folded three times to produce a sleek and easy to handle glossy piece of paper.

Museums do not use direct mail or distributors at underground exits, but they usually send some of their flyers to tourist agencies and information kiosks that are likely to be visited by their potential audience. In case of a temporary show, it is advisable to produce the leaflet well in advance of the opening and distribute it at the institution to motivate visitors to return.

Dynamics of advertisement

(Tamás Vásárhelyi)

Marketing and advertisement are different concepts. *The role of the marketing specialist* is to ensure that the exhibition is marketable: serves the needs of several visitor groups, it is enjoyable, easy to understand, user friendly in general. The marketing staff has to make every effort to find out about previous knowledge and experiences of target groups, tests their interest about the theme of the exhibition, devises a catchy title and an interpretive subtitle and oversees all documents in view of their appeal to visitors. *The advertisement specialist „sells the show"*. He or she approaches potential supporters and sponsors, offers them advertisement options at the museum, and purchases similar ones for the exhibition outside the museum. Commissioning and placing media advertisements are also a

duty of this specialist. Marketing and advertisement are both necessary for the success of the exhibition – this time we focus on marketing, as it is more related to the subject of this book.

Communication about the exhibition starts at least a month before the opening through social media sites: Twitter, Facebook and a special blog dedicated to the development of the show (see good examples in Chapter 7). There should also be pieces of exciting information about world-famous art works or groundbreaking scientific research "leaked" to the press.

Film and audio spots in the media and printed advertisements (interviews, leaflets, flyers, and posters) should appear about 10-14 days before the opening. The marketing plan should be developed so that to maintain interest all through the life span of a temporary exhibition. When a famous expert holds a lecture or a celebrity hosts a guided tour, a new (latecomer) exhibit arrives, an interesting event is staged, media should receive information and paid advert spots should also be purchased. Before the closure, an intensive campaign should be launched to reach those who do not want to miss something many others have found important enough to visit. If we are successful, results of marketing events can directly be observed in growing visitor statistics.

Printed and digital press

(Andrea Kárpáti)

Marketing an exhibition is an act of cultural communication. A museum event will be „in the news" for a longer time only if we can make it part of public discourse. Media experts presume that, in order to be shown by the media, a topic must have at least one (and preferably more) of the following three *characteristics*:

1.   Originality

2.   Importance

3.   Relation to a conflict / issue much discussed by society.

Not all museum exhibitions comply with all three requirements, and they should not be. Although if an exhibition is original, important and / or social issue-based, it is likely to lure visitors into our institution who would have never considered entering our gate simply because they supposed we had nothing relevant for their life to offer. [3]

While flyers and leaflets target the average visitor, *exhibition reviews* in the newspapers and the online media serve a different purpose. These belong to the genres of science communication, and target the interested and educated museum audience as well as professionals on the topic of the exhibition. A special review genre that focuses on not only the displays, but also on the mission, messages, material and human infrastructure of the institution as a whole is called museum criticism. [4]

Task 1

Choose an exhibition and **prepare its media kit:**

–   *Write a brief* of 50 words about the exhibition.

–   *Write a short overview* about the show (maximum 300 words) that may inspire the press to pay a visit;

–   *Choose photographs* from the home page of the museum and your own pictures taken at the exhibition as illustrations offered for use by journalists;

–   *Collect relevant documents* that the press may use as background material for the news coverage: for example, links to web pages of artists exhibiting, quotations from the works of scientists whose discoveries are represented, pieces of poetry and literature that handle similar topics and may be used as quotes to "create the mood", reviews and laudations by experts about the artists / scientists in focus, interesting stories about some of the works etc.

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[3] An example for a much discussed, very successful social issue-based art exhibition is *German Thought and Painting from Fiedrich to Beckmann*, 1800-1939, in the Louvre in Paris, till 1 September 2013.
[4] Read the discussion about this genre in the MuseumGeek blog and the response on Steven Lubar's blog!

8.3. Educational communication of exhibitions: from guided tours to interactive workshops (Andrea Kárpáti)

In the 20th century, museums started to include public education as part of their mission along with preservation and research. Hooper-Greenhill's ideas about education being a key component in every museum's *raison d'etre* suggest the realisation that museums are public institutions and education is one of the most important services they can perform to justify their support from their immediate and larger community. (Hooper – Greenhill, 2007) At present, museums have come under increasing pressure to place an even higher priority on their role as informal educators. Museum evaluations address how appealing an exhibit is to visitors. One of the indicators of appeal is, whether or not visitors will interact with an exhibit. Since learning is voluntary in a museum setting, such an interaction shows increased interest and deeper involvement than just strolling around, watching some of the exhibits. The essence of museum learning today is *interaction*. Educational programs have gone far beyond guided tours and explanatory lectures. They include, to name only the most frequent ones,

– *Experimentation in laboratories* in or near a science/technology exhibition or in simulation lab environments (for example, to gain hands-on experiences about scientific discoveries);

– *Studio work* (based on the style or theme of a master in the exhibition);

– *Experiences with the sister arts* (painting inspired by a show of theatre costumes, learning to use folk music instruments to appreciate an ethnographic display, creative writing based on works of art etc.);

– *Quizzes and quests* (that guide visitors through pointing out major attractions);

– Film shows followed by discussion (to contextualise the master / genre / culture presented).

– *Museum camp*: full, day, unusual activities in and around the museum (e. g.: treasure hunt, sleep-in, volunteering as peer guides, ticket booth personnel, storage hands etc.)

8.10. picture: Poster of a museum camp organised during the summer holidays. Vasvári Pál Museum, Tiszavasvári, Hungary.

However, not all age groups are equally targeted. Museum education surveys in The Netherlands (Haagenars, 2008) and Hungary (Káldy, Kárpáti and Szirmai, 2011)[5] arrived at similar conclusions: *educational programs in*

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[5]Káldy Mária, Kárpáti Andrea, Szirmai Anna Linda (2010): *Múzeumpedagógia Magyarországon 2008 – 2009. Helyzetkép és perspektívák .* Múzeumi iránytű 6. Szabadtéri Néprajzi Múzeum, Múzeumi Oktatási és Képzési Központ, Szentendre. An English language publication based on the following Hungarian report on museum learning is under preparation: Kárpáti, A. (submitted): Museum education in Hungary: current trends and perspectives. Paper submitted to the *Journal of Science Communication* on 30 September 2013.

museums used to be oriented mainly towards interested adults who belong to the majority nation of the respective countries.

> "The days when the education department in a museum concentrated solely on schools are well and truly past. In recent years museums have been trying to attract and retain an increasingly broader public. They do more research on the tastes and preferences of the target groups and take them into account when mounting exhibitions. Indeed, the interviewees named 'all visitors' as the target group. Most displayed a certain degree of missionary zeal to engage with people who are not used to visiting museums.
>
> The results of the nationwide questionnaires show that nowadays it is adults – individuals and groups – who form the most important target group for the educational activities in museums, usually interested laypersons, experts, devotees and senior citizens. Second place goes to children between the ages of six and twelve and teenagers (individuals). Less attention is paid to foreign tourists than in the previous report. The educational activities are least directed at ethnic groups, the disabled and the under-fives. Engaging with ethnic groups, young adults and visitors from the region is still regarded as a challenge by many museums. The literature search suggests that the low incidence of museum visits by ethnic groups may be largely due to a generally low level of education and the fact that the average age is still young. There are scarcely any museum programmes that target senior citizens, who are overrepresented in the museum-going public." (Haagenars et al., 2008, p. 14)

Falk and Dierking (2000) emphasize *the role of the social group* in the way visitors construct meaning in their contextual model of learning. Following their model, social interaction not only promotes, but also is a prerequisite for intellectual, social, personal and cultural development. Other studies with children and object-centred learning also recognize the importance of social interaction (Falk, 2009). The potential of the learning environment and its objects largely depends on the social atmosphere generated and the support young children receive through positive, reciprocal interactions. A successful learning setting functions as a community of learners, where all individuals are respected, their learning is supported, and opportunities for collaboration are provided.[6]

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[6]Good practice examples for informal learning in science museums are to be found on the Informal Science web site.

8.11. picture: Led by a curator acting as explainer, young visitors solve quizzes about the collection of the Museum of Fine Arts, Budapest. (Photo: Andrea Kárpáti)

The learning theories best suited to museum-based educational processes are constructivism and trialogical learning. According to the *constructivist theory,* the learner should be encouraged to activate a wide range of previously gained information and experiences to construct new meaning and integrate it with his or her knowledge base. Knowledge construction should be guided and promoted, but not dictated by the teacher who is invited to assume the position of mentor. As a result, visitors will come up with narratives related to the exhibition theme, new insights about their naive scientific theories based on hands-on displays and lab experiments or changes of taste and development of a flexible set of expectations about contemporary art. According to the *trialogical learning* theory, even the object of study is jointly selected and the inquiry process is a democratic sharing of ideas and resources. A successful art or science project involving works exhibited, a video film contextualising an idea presented in a display, an object offered to the museum because of its relations with an installation may all be products of trialogical learning in museums. (For educational examples of the use of this theory, cf. Kárpáti and Dorner, 2012)

Museum educators or explainers play a key role in forging bridges between museums and visitors. To improve the professional esteem and working conditions of explainers, ECSITE, the European network of science centres and museums established THE Group,[7] (*Thematic Human Interface and Explainers*). THE Group revealed the major features of a successful training program for explainers that include many skills directly related to exhibition communication:

– *Development of self-perception and professionalization* (as communicator, a museum professional, a science teacher etc.);

Expanding theoretical knowledge (e. g., theories of learning through conversation);

– Acquisition of the *dialogue model of communication with visitors* and new formats of animation;

– Training for *tackling controversial issues*;

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[7]The description of THE Group's activities and trainings can be found on the „Groups" sub-page on the home page of ECSITE.

– Enhancement of *professional negotiation skills* (e.g.: conducting successful conversations to improve the relationship between explainers and management).

"Explainers (animators, guides, pilots, etc.) are the main direct, people to people interface between science centres and their public. The relevance of explainers in the communication quality of a science centre can hardly be questioned. For many centres, interactive humans are as crucial as interactive exhibits in providing a high quality experience to the visitors. (...)

8.12. picture: Museum education session at the Open-Air Museum of Folk Art at Szentendre. The explainer shows how folk pottery was hand-painted. 2013. (Photo: Andrea Kárpáti)

The on-going transformation of science centres from expository and interactive to participatory, i.e. moving from only exhibition-centred to a more active role of the public in the science centres as well as public engagement of science ethical issues, involves new roles also for the explainers." (THE Group, 2008)

Visitors turn to handheld guides for an educational experience, however, much more frequently than engaging in a workshop activity. In a game design project called ARCHIE, researchers wanted to deal with the negative side effects of handhelds providing useful educational content but isolating friends and family members from each-other. This project explored different possibilities a mobile museum guide can offer in the future: greater versatility for visitors to get information tailored to their needs and interests (personalization), the opportunity to discover the exhibits at their own pace (localization), and stimulation through social interaction among family or group members (communication). (Van Loon et al., 2007) Their game may serve as a model for a good educational activity in a museum, too. Its main objectives are as follows:

– Encourage visitors to look more profoundly at the exhibits (for example, zoom into details of the handheld and compare it with the real life experience);

– Direct the visitor's gaze by use of spoken instructions and low-key animations on screen when it's time to look at the real object;

– Stimulate comment and discussion about the exhibition;

– Provide hardware and content for retrieval by two persons or more to ensure a social experience during the visit.

8.13. picture: Museum workshop at the Zebra Studio of the Vasarely Museum in Pécs, Hungary. 2009. (Photo: Hajnalka Kovács)

„Guided tours still come first in school activities, but there has been a sharp rise in the percentage of museums that also offer classes and workshops. The hands-on trend that is gathering pace in other educational activities is also evident in the school activities. Art and sculpture museums and museums with a mixed collection offer customized activities more frequently. This may have something to do with the introduction of art and culture subjects in the upper stream. These museums say more often that the introduction of art and culture has influenced their educational repertoire.

The museums say that schools often play a role in the development of educational material by acting as sounding boards and by testing material. The results of the interviews confirm that primary schools are the main educational target of museums. Recently, more attention has been paid to young children." (Haagenars et al., 2008, p. 16

Museums today offer a wide variety of events that target all audience groups at the same time with different activities. In Europe, the *Night of the Museums* when institutions are open till late and offer unusual, hands-on, interactive events, are very popular. In Hungary, museums have another national event to show a different face of museums: the *Summering Festival* called *Majális* in Hungarian, because it is traditionally organised in May. (See the documentary video by Veronika Werovszky that shows the atmosphere of these events.)

8.14. picture: Experimenting in the exhibition area. Visitors are asked to smell them and think about moods and emotions associated with these scents. Heureka Science Center, Helsinki, 2010. (Photo: Andrea Kárpáti)

8.15. picture: In a small cylinder at the side of each bottle, there is a text explaining the contents: its name, origin, medical and culinary uses are all described. Heureka Science Center, Helsinki, 2010. (Photo: Andrea Kárpáti)

Three types of evaluation may be used to determine how likely it is that an exhibit will successfully communicate its message to the public.

1.   *Front-end evaluation* identifies what visitors already know about the exhibit's subject matter and brings to light naive theories, pseudo-scientific ideas and misconceptions they may have about the topic. It also reveals questions and concerns regarding issues that are already part of public discourse. It is typically conducted early on in the exhibit development phase. Front-end evaluation and usually consists of visitor interviews and/or questionnaires.

2.	*Formative evaluation* methods can be used to test the prototypes of an exhibit being developed. Models are used to test what aspects of an exhibit's design are likely to work and what parts need alteration to communicate its message as clearly as possible. Such a testing procedure may result in a more accessible display, both physically and intellectually.

3.	*Summative evaluation* is conducted once an exhibit is complete, to determine how successfully the exhibit communicates its message to the public. This procedure is also called remedial evaluation as its results may be used for a similar exhibition. There are means for improving a completed exhibit, so some deficits may still be corrected during the lifespan of the present exhibition. Summative evaluation focuses on looking at how visitors interact with exhibits and what they are learning from their experience.

Although most museum professionals agree that conducting evaluations at various stages of exhibit development provides valuable information that can be used to improve the educational quality of their exhibits, many museums do not routinely conduct evaluations. Most often, limited funding and resources are the reasons, particularly by small museums. Evaluation is vitally important because, understanding your actual and potential audience can help with effective targeting, planning and timing, and consequently a more efficient exhibition communication.

8.16. picture: Irregular museum communication program: „Museum Plus" at the Museum of Fine Arts, Budapest. Every first Thursday night of the month, this museum and its sister collection, the Hungarian National Gallery, take turns in organising irregular events. (Photo: Andrea Kárpáti)

Evaluation should address the exhibition's success in achieving its educational goals. This is not an easy task because educational objectives of exhibitions tend to be specific, long-term and therefore very difficult to evaluate. To understand visitor learning, two approaches are emerging:

–	The *behaviourist model* that contends that knowledge transmitted will be integrated with existing ideas and experiences and thus become part of the learner's behaviour. When using this approach, museum staff has to consider a wider range of learning results, not just those directly transmitted by one or more educationally oriented displays. Attitude and motivation surveys may reveal important learning gains well beyond factual knowledge about an exhibit.

–	The *constructivist model:* here the student is not a passive recipient of knowledge; therefore, evaluation focuses on individual learning objectives and plans concerning the museum visit and their realisation. In a constructivist situation, the role of the teacher (or, in the case of a museum, the exhibit) is not to disperse knowledge but to provide incentives by which students can build it up. In order to understand visitor knowledge as a construct and result of the museum experience, we need to evaluate the learning process, not just the results.

Because behaviourists and constructivists have different models about the way people learn, they also tend to disagree on how information should be conveyed, what ideal learning environments are and how one should determine whether or not learning is taking place. In the museum field, all of these points can result in differences of opinion among museum staff on how to build effective exhibits and how one should go about evaluating whether or not an exhibit has achieved educational goals. First, whereas behaviourists would argue that information is conveyed through dissemination of knowledge from the exhibition to the learner, a constructivist would argue that the value of an exhibit is in allowing the learner to experiment and have educational experiences that facilitate the construction of knowledge, not its transmission.

During the process of exhibit development and evaluation, differences of opinion on learning theory can result in different museum learning strategies. The evaluation of the programs will assist the museum leadership in deciding which theory (and resulting practice) would be most appropriate for the next exhibition. As a result of regular visitor studies and program evaluations, museum educators and explainers can make data-driven recommendations to exhibit development teams to improve exhibits under development. These improvements will maximize the likelihood that the exhibition will successfully communicate its intended message to visitors.

8.17. picture: Home page for volunteers, London Natural History Museum, London

Task 2:

Observe visitor types in the documentary video by Veronika Werovszky!

Task 3:

Design a museum education task for adolescents and young adults!

1. *Choose an exhibition* that is open right now and within your reach and that is likely to be interesting for 16-25-year-olds. Visit the exhibition and identify themes and related displays that you will include in the events and activities. Read the list of existing museum learning programs, too, that the institution regularly offers and also those designed to accompany this exhibition.

2. *Look for ideas* on the home pages of museums intended for young audiences:

    a. Teen Programs, Metropolitan Museum, New York

    b. Teens behind the Scenes, Museum of Modern Art, New York

    c. El Prado Joven (The young Prado), Prado Museum, Madrid

    d. Wissenschaft für junge Leute (Science for young people), Deutsches Museum, Berlin

    e. JMI – Junge Museumsiniziative (Museum Initiative for Young Visitors), Neues Museum, Nurnberg

3. *Design the event*: describe where (in which part of the museum) it is going to be organised, when will it start, what will be the most important scientific / social / cultural contents and messages to communicate? Who will be involved? (For example, curators, actors, artists...)

4. *Compile the Facebook page of the event* (but don't make it public.)

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