Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra: METHODOLOGY FOR MULTIMEDIA PRESENTATION OF CULTURAL HERITAGE
Informatol. 49, 2016., 3-4, 212-220

212

METHODOLOGY FOR MULTIMEDIA PRESENTATION OF CULTURAL HERITAGE

METODOLOGIJA MULTIMEDIJSKE PREZENTACIJE KULTURNE BAŠTINE

Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra

Faculty of Informatics and Statistics, Centre of Professional Education
Faculty of Business Administration, Department of Managerial Psychology and Sociology
University of Economics, Prague, Czech Republic
Fakultet za informatiku i statistiku; Ekonomski fakultet, Sveučilište za ekonomiju; Prag, Češka

Abstract

This work contains draft of Methodology to multimedia presentation of cultural heritage for small and medium enterprises. Goal of the methodology is to enable owners and managers to present cultural heritage or to competently order presentation services. Methodology is developed for small and medium enterprises that focuses on conservation, animation and proposition of cultural heritage and derived products and services. In this work is taken into account that they need to do effective presentation in accordance to their business plan and development of their cultural heritage. The methodology will help managers and owners without media qualification to prepare simple multimedia presentation by themselves or to order qualified suppliers. Multimedia presentation of cultural heritage base on synergy of simultaneous effect of pictorial and narrative content. People in general are adjusted to better perceive by their pictorial cognitive skill than the verbal one. Things that people see are easier to perceive and remember than the information people hear or read. Visual communication significantly supports ability to persuade and catch the target group. By the development of technologies and their new possibilities the average demand of visual content of target group has risen. Target groups want more information in shorter time. By this the role of multimedia is more significant especially in case of graphics, photography, video or animation.

Sažetak

Rad sadrži nacrt Metodologije za multimedijsku prezentaciju kulturne baštine za mala i srednja poduzeća. Cilj metodologije je omogućiti vlasnicima i menadžerima predstavljanje kulturne baštine ili kompetentno naručivanje prezentacijskih usluga. Metodologija je razvijena za mala i srednja poduzeća koja se fokusiraju na očuvanje, animaciju i prijedlog kulturne baštine i od njih dobivenih proizvoda i usluga. U ovom radu se uzima u obzir da moraju imati učinkovitu prezentaciju u skladu s njihovim poslovnim planom i razvojem svoje kulturne baštine. Metodologija će pomoći menadžerima i vlasnicima, bez medijskih kvalifikacija za samostalnu pripremu jednostavnog multimedijskog sadržaja ili za narudžbu od kvalificiranih dobavljača. Multimedijalni prikaz kulturne baštine temelji se na sinergiji istovremenih učinaka vizualnog i narativnog sadržaja. Ljudi općenito bolje uočavaju slikovno nego verbalno. Stvari koje ljudi vide lakše se uočavaju i pamte od informacija koje su ljudi čuli ili pročitali. Vizualna komunikacija značajno podržava mogućnost da se uvjeri i obuhvati ciljnu skupinu. Razvojem tehnologije i novim mogućnostima prosječna potražnja za vizualnim sadržajem za ciljane skupine je porasla. Ciljane skupine žele više informacija u kraćem vremenu. Pri tome je uloga multimedije značajnija, posebno u slučaju grafike, fotografije, videa ili animacije.

Introduction

The aim of the article is to introduce a methodology for small and middle-sized institu-

Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra: METHODOLOGY FOR MULTIMEDIA PRESENTATION OF CULTURAL HERITAGE

213   Informatol. 49, 2016., 3-4, 212-220

tions focused on the preservation, animation and presentation of cultural products. The methodology should help owners and administrators of cultural heritage either to prepare a simple multimedia presentation of a cultural monument, or to commission its design to a competent person. The design of the methodology is a component part of the research task commissioned by the Ministry of Culture of the Czech Republic "Effective methods of support for small and medium entities of culture in the area
of national and international economy," project no. DF11P010vv024.

The presented methodology is an original one and does not reproduce any previous techniques. It was based on the findings of the research team. In the article, the authors present elementary principles and techniques of the design of this methodology. The article does not provide specific instructions contained in the methodology.

In the view of the authors, the most readily available tool of visualization applicable in the sector of small and middle-sized cultural organizations is the phenomenon of photography and photographic technique, and for this reason a particular emphasis is put on the acquisition of photographic presentations of historical monuments.

Historical cultural monument is defined here as a movable or immovable material object that evidences in a significant way the historical development, lifestyle and social environment from ancient times up to the present /1/. A multimedia presentation of historical cultural monuments is the use of synergical effect of the simultaneous impacts of various components of multi media (photography, video, sound, animation) in a single visual environment in order to attract attention of the given subject.

In what way and according to what criteria does a potential visitor choose a desirable place to visit? Unless it is his or her own past experience of the cultural historical monument or a recommendation from friends, multimedia, the component part of which is photography and video, play a significant role in this decision-making process.

Most people face an increase in the number of visual stimuli (positive or negative). Visual literacy of an average inhabitant is improving. For instance, his or her ability to differentiate the tasteful from tasteless is improving, as is the ability to isolate and find an important piece of information in the plethora of visual stimuli. The visual demand of an average visitor striving for the absorption of as many information as possible as quickly as possible increases with the rising level of technology and its capabilities. Photographers, cinematographers and web designers, as well as commissioners of multimedia presentations, have to react to these trends.

1. Description of the communication of information stored in cultural heritage

The Process of Communication

A multimedia presentation of cultural heritage represents a favorable use of a medium, which is designed and created in its multiple form (multi-media). Media, or more precisely, multimedia is a tool of communication. Let us begin by the definition of the process of communication of the information stored in cultural heritage in the Scheme no. 1.

Scheme 1. Description of the communication of information stored in cultural heritage
(key parameters are given of individual elements, the medium is represented as message/form)
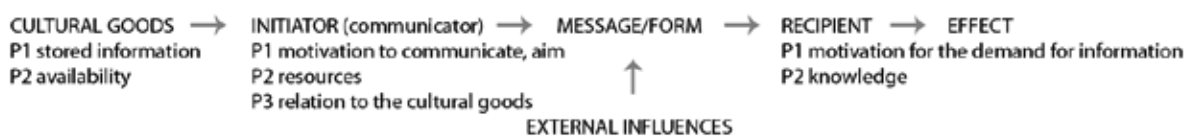
Source: own design.

Material cultural goods contain information about cultural heritage. Material cultural heritage is described in accordance with the UNESCO in the following way:

Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra: METHODOLOGY FOR MULTIMEDIA PRESENTATION OF CULTURAL HERITAGE
Informatol. 49, 2016., 3-4, 212-220

214

- monuments (architecture, sculptures, paintings, cave dwellings, combination of elements, objects – artifacts),
- groups of buildings,
- localities.

The information stored in cultural goods is:
a) directly codified in a recording and recipient acquires it through reading (of a text) or observation (symbol, painting);
b) derived from the nature of the monument, context or relations; the availability of information is defined by the possibility of physical contact with the monument; it is influenced by the physical state of the monument, level of protection, etc.

The availability of information is defined by the state of cultural goods and possibilities of its manipulation. Information in and about cultural heritage (including the non-material cultural heritage):

- the existence of cultural goods
- form, appearance, structure, characteristic traits
- directly coded information
- context

The **initiator** of communication is a subject that possesses material cultural heritage or administers it and makes decisions about communication of its contents based on available resources. Based on its relation to the cultural goods he or she initiates the process of communication with a specific intention – he or she communicates the information stored in the given cultural goods. The aims defined by the desired effect of communication are activated by social and economic motivators.

The element of **message/form**, or medium, will be clarified further in the text. It should be noted that **external influences**, such as the context of communication and communication noise, influence the message produced and it is useful to consider them at the stage of design of contents and media communication.

Basic techniques of communication of information stored in cultural heritage are:

- simple interpretation (representation, objective communication),
- animation (emotionally marked communication).

The **recipient of communication** is the target group of communication that demands information on cultural heritage for the purposes of knowledge accumulation or personal gain. The **effect of communication** is the reaction of the recipient to the message based on knowledge and ability to receive information through the designed and constructed media. The effect of communication on the part of the target group is also the main tool of evaluation of the effectiveness of communication as a whole when compared with the intentions and aims of the initiator.

Multimedia as tools of communication of information stored in cultural heritage

Multimedia are media that provide information through two or more and synergically interacting levels of communication (e.g. image and text). Qualities of multimedia allow us to communicate information with precision and high intensity, yet at the same time they allow to shift the represented reality from pure information to strongly emotionally marked one or one developed through fantasy. Scheme no. 2 illustrates uses of types of multimedia tools in both these fashions.

Scheme 2. Multimedia in the form of pure information and emotional communication

	Factual interpretation	Emotional communication
Text	Description of facts	Literary work
Photography	Image of recorded reality, documentary photography	Art photography
Graphics	Technical scheme	Illustration
Animation (illustrated moving images)	Animated technical scheme	Animated illustration
Video (moving images on the	Reality recorded on video, authentic shots,	Film

Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra: METHODOLOGY FOR MULTIMEDIA PRESENTATION OF
CULTURAL HERITAGE

215
Informatol. 49, 2016., 3-4, 212-220

| basis of photography)	video reconstruction of event	
Sounds	Voice-over commentary, authentic historical recording	Music, sound effects, atmosphere
Interactive contents (applications, web pages)	Informative contents organized in hypertext	Interactive application (educational, game)

Source: Own design.

Forms of use of multimedia and its means of expression and motivation of target groups shape five model situations, ordered here from the most informative to the most emotional:

- recording and documentation of research, restoration and other specialized activities;
- specialized documentation for educational purposes;
- educative documentation aimed at wider target groups with stylized illustrative elements;
- narration derived from expert facts;
- free narration that employs some qualities of the cultural goods.

For the employment of multimedia in practice it is necessary to define the delivery system, i.e. how the medium reaches its target group. Linking delivery system with multimedia results in the formation of the so-called media types. The relation of multimedia and delivery system is indicated in the Scheme no. 3.

Scheme 3. Multimedia and delivery systems – media types
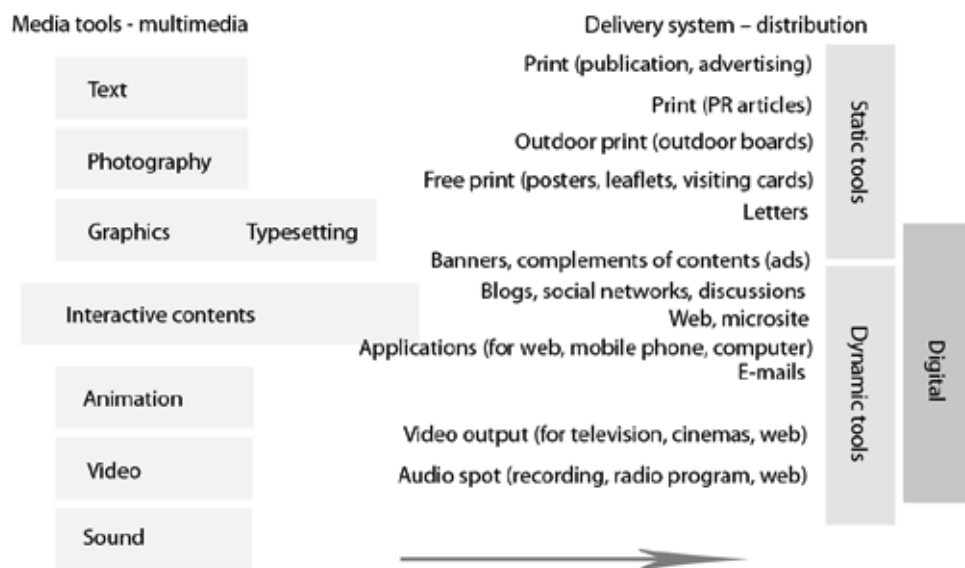
Source: own design.

A proper use of multimedia is based on the definition of aims, choice of suitable media form and delivery system. In this sense, the technique of the production of multimedia communication of cultural heritage is as follows:

1. To define aims of communication as a desired effect in the target group.

2. To create the message and determine the basic principles (according to the nature of the cultural goods and target group).
3. To select a suitable multimedia form of message and design its means of expression, i.e. the choice of multimedia.
4. To define a suitable delivery system, i.e. the choice of media types and tools of feedback.

Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra: METHODOLOGY FOR MULTIMEDIA PRESENTATION OF CULTURAL HERITAGE
Informatol. 49, 2016., 3-4, 212-220

216

2.   Target audience

The design of multimedia communication should be based upon the knowledge of target groups. However, from the perspective of directed communication of cultural goods, the recipients of information are an unknown variable. The following text will describe how to segment target groups and what means of expression may be used in individual multimedia disciplines for individual target groups. The target groups for the purposes of the project were identified on the basis of empirical surveys /**2**/, /**3**/, /**4**/.

Results are shown in the Scheme no. 4. Target groups are divided according to the dimensions of age and expertise in four quadrants. These quadrants reflect the life roles of humans and work and private spheres of life. Individual quadrants are associated with elementary functions of humans in society.

Scheme 4. Target groups for the multimedia presentation of cultural monuments and establishments
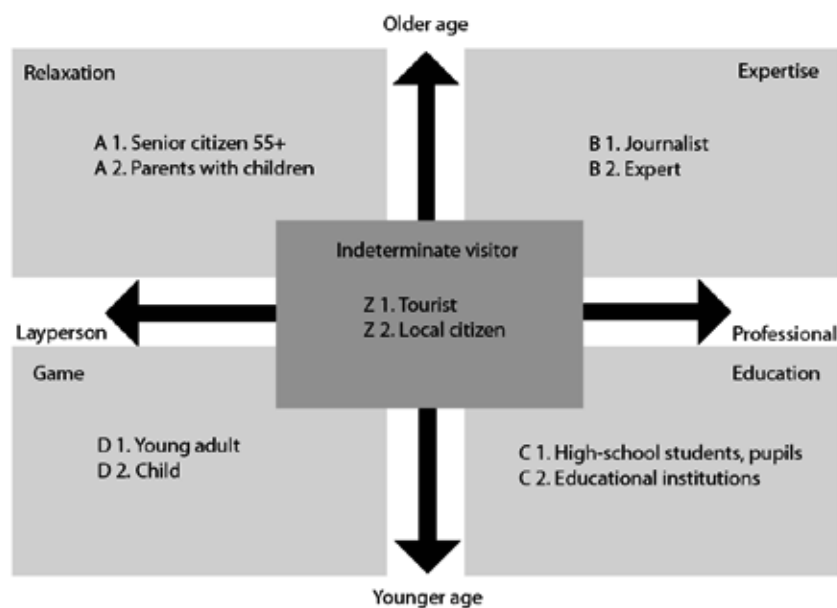
Source: own design

Education

In the fourth quadrant described by **high expertise and younger age is EDUCATION the primary function**. From the standpoint of cultural presentation the main target audience are: **elementary and high school teachers, art school professors, gymnasium teachers, other educators, leisure centers, school clubs, after school cares. Students themselves are considered secondary target audience.** They are mainly interested in educational programmes or educational trips for their students (school trips, exhibitions etc.). Most valued seem to be information about **additional educational, sports and leisure activities** at the sight and its nearby areas (for example available swimming pools, sports fields, tourist routes, ceramic and art workshops, other interesting sightseeing points, etc.). Information about affordable accommodation and catering services are also well appreciated.

Other specific target audience for EDUCATION quadrant could also be **various institutions and organizations** (facilities dedicated to educating adults, educational agencies, both business and non-profit organizations). These subjects are looking for available places for their own business and leisure events (business meetings, workshops, training events). They usually require serviceable lecture halls, workshop spaces, screening equipment, and also accommodation and catering services. Apart from these basic requirements, information about other leisure activities that can fit into their schedule are also appreciated – sightseeing trips, sports areas, bowling courts, game sites, etc. Naturally original and unique leisure activities are the most favored.

Expertise and work

Second quadrant described by **high expertise and high age sets its primary function as WORK (expertise)**. Work requires active adaptation to conditions and requirements set by the workspace. Most demanded and sought-after information are the ones applicable during various work tasks or during other expertise tests. Interest of subjects in this quadrant could be described as strongly professional. Common roles of this quadrant consist of art historians, preservationists, architects, artists and journalists. These subjects (experts) represent a wide range of professions which require either thorough knowledge of cultural and historical context or honed artistic skills. They make use of both general and specific information but require additional detailed information, with the exception being the journalist, who often requires more complex, yet not so in-depth information.

Relaxation

For two remaining quadrants described **by low expertise RELAXATION and GAME are the main functions**. Here is where cultural heritage and cultural institutions become places for relaxation and entertainment. Common roles for low expertise and "high age" would be seniors and parents with children. Though the age of this particular group is often very varied and cannot be generalized too much.

Senior is described as an elderly person with relatively more free time, both individual or with partners. Culture represents a source for various quality free time activities. Alternatively culture could also represent a platform for social interaction (in form of cultural events). These subjects are interested information about interesting tourist points (interesting enough to visit). Information about transportation and accessibility is also very important. And of course requirements such as affordable accommodation and catering are always well received.

Parents with children are described as people looking for a way to spend their free time and searching for engaging new experiences. Main interest of this group would be information about accommodation, catering and various relaxation services and information about cultural activities tied to games and sports. Their percep-

tion of cultural heritage is generally positive, but mostly without a specific interest. Their perception of ideal cultural activities consists of interesting places for parents, attractive programmes for children (for various age groups), relaxation opportunities for parents, quality and accessibility of surrounding services. Information about various family discounts and additional benefits are always well received.

Game

In the quadrant described by low expertise and "low age" are **young people and children** the main target audience. Main function of this group could be described as GAMES and other attractive activities.

A young person is described as a socially a personally maturing person. They are people without bonds, looking to spend most of their free time in company of friends of similar age groups. Culture and cultural events present an opportunity for hobbies, activities, social interaction and pleasing experiences. Although their focus is not exclusively on cultural subjectts – they consider various other opportunities in the area (the more the merrier, as a rule). Information is demanded in a wide range and variety rather than specifics. This groups requirements for catering and accommodation services are often not a deciding factor.

Young people are used to living "online", where they share information and experiences with friends and relatives. They don't like wasting time. With these habits of "fast and effective" lifestyle, they require presented information to be structured and demand time saving services such as online reservations and planning. They care mostly about presence. They hold entertainment and enjoying life as most important points and do not hesitate to spend money to do so. At the same time they are viewed as self-confident clients who demand appropriate value for their money and who do not hesitate to share their experience on social media, in both positive and negative cases.

Young people **appreciate structured and accessible information**, focusing on simplicity and clarity of presentation. Content of such presentation should highlight opportunities for interesting experiences, preferably in company of same-age peers, unusual and original activities offered by the said cultural institution (including volunteering activities).

Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra: METHODOLOGY FOR MULTIMEDIA PRESENTATION OF CULTURAL HERITAGE
Informatol. 49, 2016., 3-4, 212-220

218

Children are considered indeterminate and unfocused on information. Cultural subects can be perceived as a part of a game or a story. Children's wishes can motivate their parents to gather information and learn more about the cultural subject.

Indeterminate visitors

This group represents a very diverse target audience. It includes people with a relatively keen interest for culture, but is not professional. The group is not age restricted and can include both young and elderly. Their interest in visiting cultural institutions can be purely for relaxation purposes, but can also be a combination of relaxation, expertise and education. They are divided into 1) tourists (nonlocals) and local citizens. Another way of classifying this target audience is dividing them into traditionalists and modernists. Traditionalists focus on historical authenticity of the cultural institution. Modernists focus on the programmes and events that attempt to rejuvenate the cultural institution in order to make it more attractive and offer more opportunities for entertainment. This naturally influences the way how different people search for information, based on "orientation" in this matter. Classification of target audiences presented above are primarily (not exclusively) focused on tourist visitors. But cultural presentation should also address local citizens in nearby towns and cities. Naturally these presentation are ought to be different from when addressing tourists. Firstly it should inspire citizens to identify the institution as part of their homeland and motivate them keep it as their own pride – highlighting its symbolic and historical value. Secondly it should introduce the cultural institution as a place for symbolic meetings, ceremonies and rituals which are important for local community and citizens (for example, christening ceremonies, graduation ceremonies, anniversaries of important historical events, wedding ceremonies, etc.).

3. Principles and rules of visualization

Visualization of cultural subjects in form of static (photography) or dynamic (videos, animations) images depends on the purpose its production, on the author and primarily on the recipients (audience). Different target audiences have naturally different tastes and requirements, which should be respected and reflected while producing visualizations. Visual information can be divided into 3 groups, depending on its purpose (and how it affects the spectators): Representative, Aesthetic and Informative.

Representative purpose

Character of produced visualizations should ideally reflect their main purpose. That purpose is "representing" the said cultural institution. In the same sense how significant is the quality of self-presentation for official government institutions and business subjects, curators and administrators of cultural institutions should also pay attention to developing a high quality (online) presentation. High quality visualizations are the ones that appeal to the visitors and at the same time highlight the grandeur, greatness, purity, professionalism, care, perfection of the said cultural subject.

Videos and photography are most often used to represent the institution on websites, but also can appear in various printed media. It is therefore necessary to have appropriate quality equipment for production to meet the standards (devices capable of capturing high definition images, appropriate lighting equipment – for both day and night capturing). It is author's responsibility to map the terrain beforehand and decide on ideal conditions (composition) and angles. For the most perfect possible spectator impression it is essential to pay close attention to lighting conditions and color atmosphere during production, as it is something that can change very abruptly.

Aesthetic purpose

Aesthetic purpose is primary in cases where appeal and attractiveness are the most important aspects. Most often these visualizations are produced with **the purpose of attracting visitors and appealing to them emotionally**, eventually motivate them to visit personally. These images can offer a different view of the cultural institution that could be hidden during a personal visit, and can also fulfill the representative purpose. Authors have more artistic freedom and can work with various assets such as overall atmosphere, depth of field, capturing motion, etc. Key words of such production would be: mysterious,

unconventional, attractive, appealing, dramatic, curious, unusual.

Composition of these images and videos are dynamic and their purpose is **to catch ones attention**, sometimes at the cost of clarity. Their authors are mostly creative photographers (both professionals and amateurs). It is the "artistic freedom" that can make the content more appealing and attractive than more common representative visualizations, described above.

Informative purpose

In many cases it is more important to highlight and present specific points and important information, rather than just capturing the beauty and atmosphere. **The main purpose is to inform those, for whom the visualization was created.** Key words in this matter are: simplicity, clarity, emphasis on information.

This category includes a very wide range of video and photography content with different purpose and context in which they are used. That is unfortunately why it is impossible to suggest how an "ideal informative visualization" should look. **The core remains the emphasis on clarity of presented information/message**.

4.   Visualization and types of depiction

After defining the purpose of visualizations starts the **process of deciding which means of expression, methods and equipment are necessary to achieve such depiction of reality that would comply the proposed purpose the most**. There are 2 types of depiction – Documenting and Emotive.

Documenting depiction

The main purpose of documenting depiction is conveying information. Final visualization should give insight on the architectural subject from most possible perspectives – **it should depict not only the appearance and characteristics of the said subject but also convey information about its surroundings and nearby points of interest**. It is important to keep track of this aspect during the production (choosing locations and effective time planning, for example). Fundamental technical requirement is **deep depth of field** (high aperture ratio on capturing devices). Images

captured with this setting will have focus on both background and foreground, allowing all depicted subjects and their details to be perfectly captured and visualized. Devices with aperture priority modes are especially useful specifically for architectural photography.

For best informative capturing it is recommended to use wide-angle lenses, i.e. lenses with focal length of 16-40 mm. In cases where even such lenses cannot capture the whole desired scenery exists the **technique of panoramic photography**, i.e. capturing a series of images in succession with approx. 20% overlap and connecting them afterward using image editing software. Panoramic video recording is only recommended with a tripod.

Emotive depiction

People are often overwhelmed by the amount of various visual stimuli on daily basis, especially in present environment. Our senses then become dull as we grow "indifferent and immune" to visual stimulation – we lose interest and motivation to accept visual information. Therefore it is important to also **focus on the emotional aspects** of human perception and offer some kind of experience and emotion to ones spectators.

The main purpose of emotive depiction of architecture is to convey feelings and emotions. Therefore there is no universal guide on how to capture such images or on what settings to use. Although there are a few general rules such images should abide to – ones work should:

a)   Reflect author's feelings the moment he was on set next to the captured subject

b)   Convey feelings, messages and emotions to interest potential visitors

This type of depiction offers an opportunity to experiment. Authors are encouraged to break the rules and take on a more subjective approach to in attempt **to capture an image in such a way for it to be emotionally attractive for spectators**. Though one should be aware of creating an unnecessary *kitsch*, which is unfortunately not so uncommon when attempting to create something truly original.

Making use of **reflections and mirrors** is one of the effective techniques in emotive photography – for example, reflecting the architecture in

Stanislav Horný, Eva Jarošová, Alois Surynek, Zdeněk Vondra: METHODOLOGY FOR MULTIMEDIA PRESENTATION OF CULTURAL HERITAGE
Informatol. 49, 2016., 3-4, 212-220

220

nearby water surface. This technique also allows creative use of window reflections, glass reflections or even puddles.

Detail shots are often forgotten as another option of emotive architectural photography. Most photographers and film directors focus on long shots, which is a mistake. Small details and close-ups are most capable of telling stories and give architecture a certain shroud of mystery. Close-up shots also often describes architectural style better than any other method – it can be used both as a functional and aesthetic component of the whole subject. Utilizing close shots allows authors to focus on specific themes such as various textures, window reflections, color palettes, light and shadows, etc. Such images force spectators to engage and think about the context of the picture and ultimately gather enough interest to visit the depicted subjects personally.

Another interesting way to capture spectator's interest is **capturing images of objects and places that are usually hidden or inaccessible to regular visitors.** They may appear unappealing or even intimidating at first, but in the end create more interesting points for the subject as a whole.

References

/1/ Dostal, Petr, Černa, Jitka, et al. *Marketingové řízení památkových objektů*. 1. ed. Praha: Ekopress, s.r.o, 2014. 195 p. ISBN 978-80-87865-14-9.

/2/ Jarošova, Eva, Surynek, Alois, Novy, Ivan. Using cultural potential in tourism for support small and medium enterpreneurship development in small destinations. In: WEBER, Irena, GODNIČ VIČIČ, Šarolta (ed.). *4th Encuentros RESPONSIBLE TOURISM*. [online] Portorož, 27.09.2012 – 29.09.2012. Portorož : University of Primorska, Faculty of Tourism Studies – Turistika, 2012. 1 s. ISBN 978-961-6469-60-9.

URL:
http://www.encuentros.si/images/4encuentros.pdf.

/3/ Jarošova, E.; Surynek, A. *Vztah hradu nebo zámku a sociálního okolí*. Konference NAKI, FPH VŠE Praha 20. 6. 2013.

/4/ Dostal, Petr, Černa, Jitka, et al. *Marketingové řízení památkových objektů*. 1. ed. Praha: Ekopress, s.r.o, 2014. 195 p. ISBN 978-80-87865-14-9.

Literature

1. Surynek, Alois, Jarošova, Eva, Novy, Ivan. Výzkum spotřeby kulturních statků realizovaný KPSŘ. In: DOSTÁL, Petr, DIANOVÁ, Markéta (ed.) et al. *Management kultury. Sborník z milníkové konference projektu NAKI*. Praha, 14. 09. 2012. Slaný: Melandrium, 2012, pp. 54–65. ISBN 978-80-86175-81-2.

2. Surynek, A; Jarošova, E; Novy, I. (2013) Lifestyle, Consumption and Segmentation in Culture. In Kubátová, H. et al. *Ways of Life in the Late Modernity*. Olomouc: Palacký University. pp. 211 – 228.

3. Horny, Stanislav, Vondra, Zdeněk, Phung, Hyu Nghia, Kadlecova, Petra, Zidka, Lukáš, Tomašek, David, Vitek, Pavel, Truhlar, Filip, Šubrta, Václav, Sigmund, Tomáš. Úvod do multimédií. 1. ed. Praha : Oeconomica, 2013. 308 p. ISBN 978-80-245-1987-6.

4. Vondra, Zdeněk. Intermédia, multimédia a kognitivní aspekty divadelní tvorby v netradičních prostorách. In: Žižka, Tomáš, Schmelzova, Radoslava. KNOWtilus ponor do vědy skrze umění. Praha : AMU, 2014, pp. 46–51. 215 p. ISBN 978-80-7331-290-9.

5. Vondra, Zdeněk. Multimédia jako nástroj využití informace uchované v kulturním dědictví. Culturologia, 2014, 3, vol. 1, pp. 14–20. ISSN 1805-2886. eISSN 1805-2494.

6. Vondra, Zdeněk. Příprava modelu multimediální komunikace. In: Sborník prací vědeckého semináře doktorského studia FIS VŠE [CD]. Praha, 13.02.2014. Praha : Oeconomica, 2014, pp. 93–103. ISBN 978-80-245-2010-0.