

IDENTIFYING NEW HISTORICAL INFORMATION USING A METHODOLOGY FOR DEVELOPING A MULTIMEDIA APPLICATION - THE CASE OF THE HALA SULTAN TEKKE APPLICATION

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In this paper we discuss a methodology for identifying new historical information. This methodology is based on the development of a 3D animated multimedia application, simulating ancient archaeological monuments and the life of people in these monuments at the time point in history under investigation.

Traditional methods of identifying new historical information include studies of books, journals and

other relevant printed and digital documents as well as visits to the archaeological monuments and detailed examination of the ruins, drawings, sculptures and other ancient remains. Such studies are carried out by archaeologists, historians, architects, anthropologists, sociologists and other relevant scientists and artists [1, 2].

The methodology presented herein is based on the active involvement of all the aforementioned specialists as well as the substantial contribution of technologists and more particularly Multimedia and 3D Animation Designers and Developers. It was first introduced in [1] and briefly presented in [2]. It was originally more specific in the sense that it required the implementation of the Space Syntax method for spatial analysis of the monuments [1,2]. However, since then it has been modified becoming more general and more flexible, allowing any architectural methodology for spatial analysis to be used.

The methodology starts with on-site investigation of the monuments by the specialists. A 3D virtual reconstruction of the monuments is then developed by the architects, using 3D architectural software. The developed application with the 3D drawings is then taken by the multimedia developers and 3D animators for further development. Based on the knowledge of ancient life, 3D images are constructed and ancient life is animated in the virtual monuments.

The important contribution of the methodology as already addressed in [1,2] emanates from the next stage, during which the aforementioned non-technologist specialists (i.e. historians, archaeologists, etc.) analyse and examine the reconstructed animated virtual life. The analysis and examination of this virtual world leads to new conclusions about ancient life and helps the identification of new historical information. Furthermore, we believe that the new version of the methodology allows us to further investigate and compare the results of utilizing different spatial analysis methods. This may lead us to conclusions such as to which such method is better or whether the specific method used does not really matter.

We are now in the process of evaluating the results of the application of this methodology on a case study we have recently completed using this methodology, namely the virtual reconstruction through a multimedia application of the Hala Sultan Tekke, Cyprus [3, 4, 5].

Introduction:

In detailing the processes employed in creating projects with narrative delivery of history, which employ graphical and audio effects to immerse its end users in decades of cultural heritage, we have to consider the emergence of decidedly humanistic concerns. One can characterize these as "the ethics of virtual history". These include the challenge of making the right choices in preserving authenticity while engaging the targeted audience, balancing historical realism against rational necessity in creating choices and completeness within the limitations of digitally constructed environments [6].

When trying to identify new historical information, historians and archaeologists focus their attention and work on visiting archaeological sites, studying ancient remains, reading relevant journal articles and books and watching videos and multimedia applications. Videos and Multimedia applications are produced with the active involvement of historians and archaeologists. Without them, much inaccurate information may be disseminated to the audience.

In addition, developers can easily get trapped within the information and data taken by one and only scholar, relying solely upon their own knowledge and individual technical skills. This model can be an ethical disease to projects in which both technical and humanistic elements are intergraded. Creators of such projects need to be encouraged on adopting interdisciplinary approaches, uniting humanistic and technical viewpoints to achieve ethically desirable outcomes [6, 7, 8].

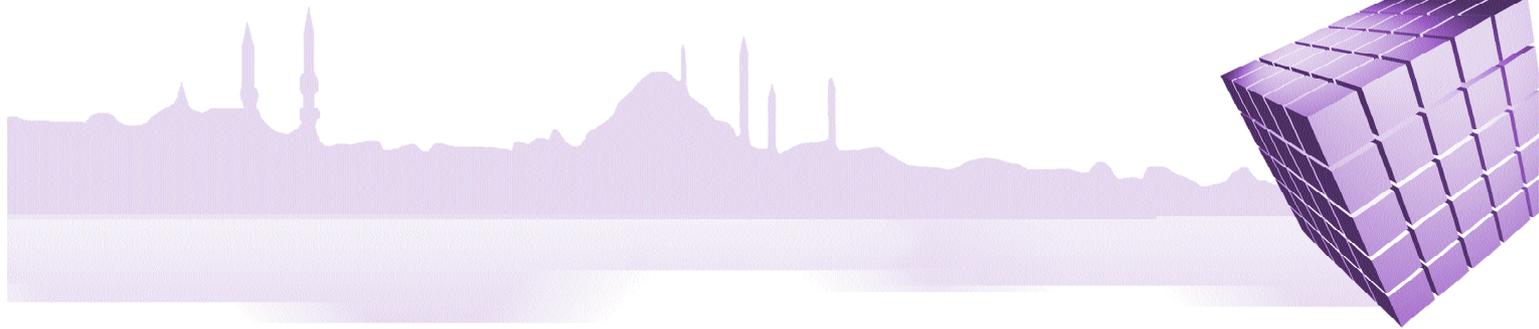
Depending on how media is used in such presentations, people can grow in sympathy and compassion or become isolated in their own beliefs, which can lead to undesired results. Not even those who reject the media can avoid contact with others who are highly influenced by them. Improper

planning, budgetary constraints and commercialism can also bias development into non-objective profit making projects.

Despite the fact that a lot of developers would think that there is no place for fine artist in the development of a multimedia project with narrative delivery of history, the place of artistic process in society is as important now as it has always been. The same way that artist were involved in creating what we today refer to as our cultural heritage the same way they should be regularly and creatively involved in heritage projects using new media technologies. Various cultural institutions as well as industrial developers could produce projects where artistic vision can clarify history. Museums and cultural foundations, in collaboration with information technology developers, could invent common programs, aimed at stimulating and supporting artists in their use of new media to elaborate creative visions of past cultures and civilisations. Freely artistic recreations of history, commissioned by cultural institutions, could become part of public property, and could challenge some currently immoral attempts to monopolise aspects of the human cultural heritage for political or commercial gains.

Original visions of ancient cultures through new technologies could be valuable in challenging positions adopted by certain institutions, which consider themselves the only correct interpreters of our culture. Yet one of the strengths of new media is its ability to integrate a variety of disciplines, conveying multiple interpretations and visions.

Herein, we propose a methodology for identifying new historical information, based on the study of a multimedia application constructed through the active involvement of architects, historians, archaeologists, multimedia producers, animators and artists. The historians, architects and archaeologists involved in the development of the application, study the developed application and the simulated ancient environment in order to identify new historical knowledge. The multimedia application is then accordingly updated.



This paper is structured in the following way. In Section 2, we explain the proposed methodology and its stages. Finally, in Section 3, we conclude by reviewing our work and briefly discussing our future work in this subject area.

2. The Proposed Methodology

In this section we explain the team needed for carrying out the proposed methodology and the various stages of the methodology, showing also the involvement of the various members of the team in each stage.

In order for the proposed methodology to be carried out, a project team should be established. The team is lead by the Team Leader (TL) who is responsible for the successful completion of a project based on the methodology and carries out duties similar to any project manager. The team consists of:

1. Team Leader
2. Architect (s)
3. Historian (s)
4. Archaeologist (s)
5. Multimedia Designer and Developer (s)
6. Animator (s) (2D, 3D)

The stages of the proposed methodology are briefly given below:

During the first stage S1, the historical monument is examined through visits and studies of the site. The historian(s) and the archaeologist(s) help the architect(s) to understand better the various buildings as they were originally built. The study of various related papers and drawings are also thoroughly studied by the team members in order to get a better understanding of the architecture of the site. The role of the historian is to collect all the available information on the monument under consideration. The aim would be to collect information that would cover the relevant historical material from all possible aspects. The coverage would be holistic so as to enable the person studying the monument to place it in its proper historical context. In the cases where there are different views on any particular issue it is the intention to collaborate with different specialists so as to present as accurate a picture as possible. It is also an integral part of the methodology for the historian to work closely with other specialists who would make their own contribution. Such specialists are archaeologists, people specializing in the preservation/restoration of historic monuments as well as the relevant authorities who have responsibility over the particular monument.

During the second and third stages S2, S3 the architect(s) analyse the monument and its

Stage	Description	Team Members
S1	Visits to the archaeological monument and examination of the monument - Study of historical documents and relevant papers	Architect(s) Archaeologist(s) Historian(s)
S2	Architectural analysis of the monument	Architect(s) Archaeologist(s) Historian(s)
S3	2D and 3D reconstruction of the monument	Architect(s) Archaeologist(s) Historian(s)
S4	Integration of 2D and 3D animated life and development of the Multimedia Animated application. Parallel study of the multimedia application and if new information is identified then update of application and go repeat this stage until no more information is identified.	Architect(s) Archaeologist(s) Historian(s) Multimedia(s) Animator(s)

architecture. The analysis is carried out by visits to the monument and studies of the various architectural drawings. Based on this study the architect(s) built (with the help of historian(s) and archaeologist(s)) 2D and 3D models of the monument. These models are then integrated into the multimedia application.

During the fourth stage S4, the multimedia application is designed and implemented. Firstly, the interface of the multimedia application is built. This is based on the information content of the application. The structure of the information is decided. This results in the various menus and submenus. The interface screens are also designed and developed. Then the 2D and 3D architectural drawings are incorporated into the application. Finally, the 3D animation of the ancient life is integrated into the application. During this stage, the reconstructed buildings and ancient life are detailed examined through the multimedia application. The architect(s), the historian(s) and the archaeologist(s) look for new historical information through a detailed study of the simulated environment of the multimedia application and make any corrections to the represented information and the multimedia application. Once corrections and changes are made the study restarts until no further information is identified (and hence no more changes are needed).

3. Conclusions

The proposed methodology has been used for the development of a multimedia CD, namely the Hala Sultan Tekke [3, 4, 5]. We are currently in the process of evaluating the methodology based on our findings from the application of the methodology to this case. We hope to be able to present our findings soon.

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