USER EVALUATION IN THE CONTEXT OF CULTURAL HERITAGE VISUALIZATION APPLICATIONS

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This STSM explored research questions related to user evaluation of cultural heritage visualization applications, in the aim to develop Guidelines/recommendations, and a set of conclusions based on experience from typical visualization applications.

The project tested the following Hypothesis:

Hypothesis	Percentage of confirmatory answers
H1	78,30%
H2	62,50%
H3	50,00%

When user interviews were designed and implemented, the following key aspects were taken onto account:

- information perception
- immersion of users in the stories
- appreciation of interactive storytelling

Example: Music contribution onto perception

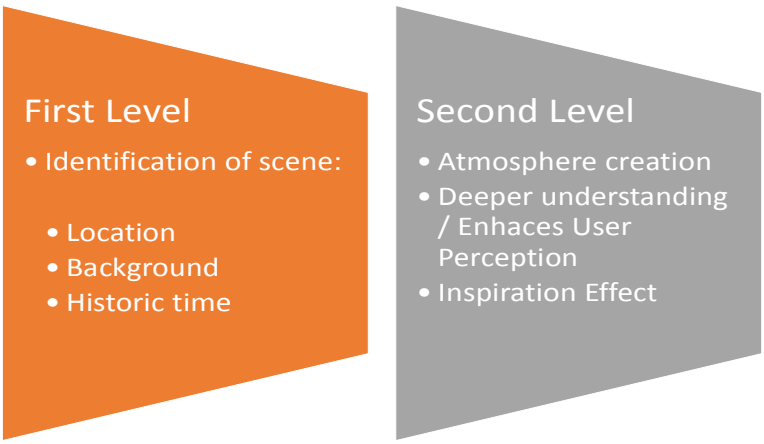

Figure: Music effect in a first and second level of perception

Hypothesis were formulated in order to learn about future market demands, based on the feedback of implied actors. Following some previous experiment, with Bosnian local students, we decided to obtain more information from non-Bosnian users, that will ideally be no influenced by the previous knowledge of the heritage site.

The presentation object of study was based in Unity Web Player.

It includes several videos, a 3D model, ambience music, natural voice storytelling (in Bosnian language) and English Subtitles. It can be found at URL: http://h.etf.unsa.ba/han/sd/Build.html

Image 1. Caption of the presentation with English subtitles (First Chapter)

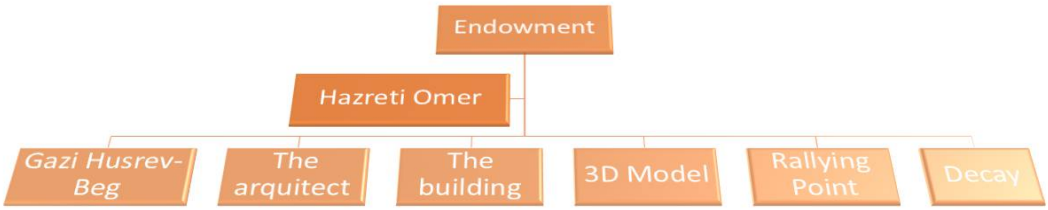

Figure 1. Schematic display of the Navigation Sections available

Literature review included other similar presentations:

Image 1. Representation of Ritual inside a Tekke Building.
3D model from Merisa Huseinovic and Razija Turzinhodzic

Evaluation is a sistematic and methodic process, where we need to ask the involved actors, and monitorize results. This was a formative evaluation: we want to learn from the results, and summative- as we consider this work a continuation of the one started with Bosnian national users .

5.1 Experiment design

For a succesful workwithin Evaluation, is very useful to be trained in Scientific Research, but also to have some social abilities, in order to made contribution of users to be fluent, and cover a broad spectra of possibilities. This cannot be done with a closed or written questionary, but through open and monitorized interviews.

Evaluation indicators (cuantitative, cualitative or mixed), were discussed. We forecasted the evolutionfrom criterial evaluation (as impact parameters) onto new UX evolutive approaches.

Each research needs to be based in indicators, as well as feasible sources of verification. In order to obtain answers to our general objective (storytelling), we need first to discern some specific objectives. Some criteria as efficience and extent need to be considered, and questions would ideally be in the format of "Until which extent?" in order to avoid closed questions with dicotomic answer (yes/no).

Questions were formulated in the following format:

Had you ever visited a virtual reconstruction of heritage? I am curious, which one?	Q1
Have you heard of / When have you heard about Tašlihan for the first time?	Q2
After having seen the presentation, could you say what is a Tašlihan?	Q3

Do you wear glasses?	Q4
Do you have any problem for hearing?	Q5

In order to proceed with research about Storytelling method:

How interesting and engaging did you found the stories at presentation?	Q6
Did you saw a common line? do you think it exists a narrative coherence?	Q7
About music how it contributed to the experience? Did it help to keep the attention?	Q8 & Q9

For 3D model and navigation:

Which is your thought about 3D model?	Q10
Please tell me your thoughts about quality of model's geometry, textures and illumination.	Q11
What about the navigation through the model? and in General?	Q12 & Q13

Immersion Feeling

Do you think this kind of presentation provides a deep immersion or not?	Q14
Did you felt immersed in different space and time?	Q15

Overall satisfaction of users

Please describe, what you liked and disliked in the application.	Q16 & Q17
“What would make it a "10"?” (would you improve something?)	Q18
“What did you liked the best in the Tašlihan application?”	Q19

Impact Study

Until which extent this presentation invites you to know more about local heritage and history?	Q20
Until which extent do you agree with the following quote? "architecture is the will of an epoch translated onto space"	Q21

A total of 21 points were evaluated, some of them with several sub-levels. 7 Users from different academic background contributed to statistics, with very complete feedback, detailed at internal STSM report.

It was researched also how could the authenticity of the object be maintained by the digital model. Beside a majority of positive comments, there are still some details to improve. 25% of interviewed considered the model to be still far to be considered Augmented Reality, but 100% of users remarked the importance of 3D model as part of presentation. Complete feedback and statistics are available at STSM report sent to COSCH.

Study demonstrated how storytelling method in general, and this presentation in particular, inspire the user onto a broader extent than if we were using conventional methods as video.

This work was developed in the context of WG5 primary tasks and subtasks: Identification, planning, implementation and testing of typical applications of visualization within CH domains. The proposed STSM contributed onto research of interactive virtual environments, by exploring key concepts and definitions of cultural heritage visualization applications, from the perspective of user evaluation.