Developing principles for outdoor mobile multimedia guides in cultural heritage settings

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ABSTRACT
This study aims to develop design principles for outdoor mobile multimedia guides in cultural heritage.

Categories and Subject Descriptors
H.5.2 [**User Interfaces**]: User-centered design

General Terms
Design, Human Factors

Keywords
Mobile, Usability, Handheld and Cultural heritage

1. INTRODUCTION
There are currently a large number of initiatives in mobile technology related to culture and tourism, which has become an understandably popular domain for handheld information devices. Mobile guides are the most popular ones. Some are designed for use in indoor and others in outdoor settings. In this study, the design of outdoor mobile multimedia guides is considered.

2. AIM AND OBJECTIVES
The aim of my research is to generate principles for selecting and presenting on-screen information and interactive functionality for users of mobile devices in outdoor settings. The example domain will be that of mobile tour guides for tourists, local people, students and families. Central to the research will be the issue of multimodality, particularly the graphic and interaction design issues involved in viewing video, in combination with other media, on a mobile device in an outdoor context.

3. DESIGN PRINCIPLES
A number of projects concentrate on guidelines to develop mobile systems for outdoor and indoor settings. Grun (2005) developed a framework to support different application scenarios, such as presenting map-based city routing. Savio & Braiterman (2007) display ten heuristics for mobile interactions considering the human and devices limitation arising from the context of use. Likewise Paay & Kjeldskov (2007) created a method to provide mobile system designers with knowledge about elements in the user physical context, so that information which already exists in the user's environment can be indexed into the mobile interface. Applied to mobile learning settings Grasso & Roselli (2005) developed guidelines for designing contents and courses on mobile devices. Similarly, Damala (2007) brings a new perspective of designing

mobile guides based on museum learning theories and object oriented learning in museum settings. All of these perspectives are of major importance, as is the nature of the information itself. However, there is a lack of studies of how people interact with representations on the mobile screen, in different contexts.

4. METHODOLOGY
In order to investigate the effectiveness of various potential design solutions, an experimental prototyping approach will be taken. There are therefore two major phases to the study: firstly the design and development of a realistic prototype tourist guide package and secondly an experimental phase in which parameters of the design are manipulated and user reaction gauged. This will involve measures of usability, acceptability and learning. The research is consisting of the literature review and identification of the main requirements and limitations of mobile device interfaces.

5. CONTRIBUTIONS
The project will produce principles of how to present information and provide interaction for user's with different characteristics on mobile cultural guides.

6. ACKNOWLEDGMENTS

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