Usability and perception of an architectural VR-model of an office building

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Abstract

It is important that the costs and effort in making a Virtual Reality (VR) model support its purpose in the specific context in which it is used. The present research aims to clarify which properties in VR-models contribute to improved experience of aspects of the model that are relevant in the use context and which therefore improve the models' usability in the social processes of which they are part. The study explores the practical usability of a VR-model, showing a planned office building in Göteborg, Sweden. The model shows the exterior and interior of the building. Three different office versions were included. The model was shown to employees who were going to have their future offices in the house. The context was a decision-making process, where it would be decided which type of future office they would work in. After viewing the model, the employees filled in a questionnaire concerning their experience of the model's usability in the decision-making process concerning what type of office they would work in. In spite of the fact that it did not provide, for example, maximum immersion and control, the results based on data from 99 employees showed that most of the respondents felt that the VR-model was a useful aid in the decision-making process concerning their future workplace. Future research should be conducted on which properties characterise cost-effective, high-usability, VR-models in different specific use contexts.

Introduction

The building process can be divided into the following phases: architecture, planning, construction, and building management and maintenance. Blueprints are one of the main tools used for communication between co-workers in the different phases and have been so for many years. However, the use of Virtual Reality (VR) in the building process is becoming more and more important and a great deal of research is currently being done to improve the techniques of VR presentation. At the same time, optimal use of VR in the different stages of the building process is not clear.

On a general level, research has indicated the importance of considering the larger social contexts in which IT-products, and more specifically VR-products, are used

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