

Copernicus - 3D Wikipedia

Jacek Jankowski*

Digital Enterprise Research Institute, NUI Galway, Ireland

Abstract

In this paper we present one of the potential paths of the evolution of Wikipedia towards Web 3.0. We introduce Copernicus - The Virtual 3D Encyclopedia, which was built according to 2-Layer Interface Paradigm (2LIP). The background layer of the 2LIP-type user interface is a 3D scene, which a user cannot directly interact with. The foreground layer is HTML content. Only taking an action on this content (e.g. pressing a hyperlink) can affect the 3D scene.

Keywords: Design, Web3D, Wikipedia

1 Introduction

Wikipedia emerged in January 2001; it currently ranks among the top ten most-visited websites worldwide. As of December 2007, Wikipedia had approximately 9.25 million articles in 253 languages. Questions arise: Can Wikipedia be improved? Can it offer a better user experience? Can it magnetize even stronger?

Some web designers dream about building interfaces that approach the richness of 3D reality. Nevertheless, user studies proved that complex and disorienting navigation and annoying occlusions can slow performance in 3D interfaces [Ridsen et al. 2000].



Figure 1: Two-layer architecture of a 2LIP page.

Our answer to this problem is 2-Layer Interface Paradigm [Jankowski and Kruk 2008], which assumes that building graphical user interfaces involves the integration of two layers (see Fig. 1): The first layer is a 3D scene, which a user cannot directly interact with. The second layer, above the 3D view, is HTML content. Only taking actions on this content (e.g. pressing a hyperlink, scrolling a page) can affect the 3D scene. Our approach builds upon well established hypertext model, it does not rapidly change the style of interaction, from the one users were used to in classic HTML pages. We decided to use 2LIP to bring Wikipedia into the third dimension.

2 Copernicus

In order to illustrate our idea we have implemented the prototype system called Copernicus (see <http://copernicus.deri.ie>). It resembles Wikipedia. However, in comparison to a classic wiki page, the background in Copernicus is a 3D visualization of the place/object

described in the article. Users can change the font size and the transparency of the presented text using a set of sliders; they can make their reading experience more convenient by adjusting these parameters.



Figure 2: Polish Heritage Park in Olsztyn.

While reading an article the user can be presented with details from the 3D scene; clicking on the hyperlinks, e.g., related to an interesting place, or scrolling the text of the article, can trigger a predefined camera movement. For example: a user reading an article about Polish Heritage Park in Olsztyn (see Fig. 2) might be interested in taking a closer look at a flag used in the great rebellion. Clicking the "flag" link triggers the animation. The camera will smoothly move over the 3D scene following the predefined motion path; it will stop behind the workshop showing this historical artefact.

3 Conclusion and Future Work

In this article, we have presented 2LIP - a new way for designing interactive 3D web applications. We introduced Copernicus, a prototype application that can be placed between Web 2.0 and Web3D. The evaluation has shown that due to only a slight modification of the current web browsing, users had no problems to interact with this system [Jankowski and Kruk 2008]. In future we plan to make a content editor, conceptually similar to the one from Wikipedia. We believe that this kind of evolution is necessary to prepare people for the full-fledged 3D Internet.

References

- JANKOWSKI, J., AND KRUK, S. R. 2008. 2lip: The step towards the web3d. In *Proceedings of WWW'08 Conference*, ACM.
- RISDEN, K., CZERWINSKI, M. P., MUNZNER, T., AND COOK, D. 2000. An initial examination of ease of use for 2D and 3D information visualizations of web content. *International Journal of Human Computer Studies* 53, 5 (Nov.), 695–714.

*e-mail: jacek.jankowski@deri.org