

## Search, Explore and Navigate - Designing a Next Generation Knowledge Media Workbench

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Nowadays, accessing digital information spaces such as personal data, online databases or the World Wide Web is a daily activity of nearly every individual. However, information work like "writing a scientific paper" or "investigating for a news article" is a very demanding task. One reason for this is the continuously growing complexity of information spaces, resulting from the increasing quantity and heterogeneity of information objects and relations between them. Another cause is the difficulty in execution within a multifaceted individual creative workflow<sup>1</sup> within today's digital information-systems. Such a workflow contains diverse activities like information-seeking, information-management or archiving of information objects. The majority of tools focus on assisting in single aspects of such a workflow like the very important task of information-seeking.

Nevertheless, most of them are isolated applications that are hard to integrate into a creative workflow of a person. Content and functionalities are scattered over dozens of applications, websites, storage formats, interaction models and devices - challenging the user's cognitive skills respectively. This often leads to the necessity for workarounds, resulting in a destructive degree of complexity and "information fragmentation".

Based on these requirements for creative information work, we design a Knowledge Media Workbench that supports the entire workflow in one unifying workspace<sup>2</sup>. Our approach, called MedioVis 2.0, tries to offer comprehensive visual and reality-based support for all activities of creative work with (digital) libraries such as searching and browsing different information spaces (e.g. digital libraries, the web) or keeping and managing of information objects and knowledge artifacts for later use. As a data source we use the media specific part of the library of the University of Konstanz, consisting primarily of DVDs or VHS tapes. Additionally, we augmented this database with different online services like Google Maps or the IMDb.

With MedioVis 2.0, we try to offer a next generation user interface, which is inspired by the concept of reality-based interaction<sup>3</sup>. This concept represents a theoretical framework that ties together a subset of relevant interaction styles, which relate to the behavior of users in the real world.

Hence, the combination or blending of real world artifacts with digital information objects, like a real DVD is one important part of the design. To provide a user interface that is capable of integrating this real- and digital-world interaction, MedioVis 2.0 relies primarily on the paradigm of an Zoomable Object-Oriented Information

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<sup>1</sup>Kuhlthau, C. C. (2004). Seeking meaning: a process approach to library and information services. volume 2nd Edition. Libraries Unlimited.

<sup>2</sup>Eibl, M., Reiterer, H., Friedrich, Stephan, P. F., Thissen, F. (2006). Knowledge Media Design: Theorie, Methodik, Praxis. Oldenbourg; Auflage: 2.

<sup>3</sup>Jacob, R. J., Girouard, A., Hirshfield, L. M., Horn, M. S., Shaer, O., Solovey, E. T., and Zigelbaum, J. 2008. Reality-based interaction: a framework for post-WIMP interfaces. In Proceeding of the Twenty-Sixth Annual SIGCHI Conference on Human Factors in Computing Systems .

Landscape<sup>4</sup>. Within this paradigm, an information landscape of virtually infinite size serves as starting point for exploration of the information space. MedioVis 2.0 arranges each media object as a digital representation on the zoomable landscape. The more the user zooms into the content, the more details and functionalities are revealed by a "semantic zooming" approach. Thus, the available functionalities such as playing a video or accessing a website are always coupled with the information object itself, as it is proposed by object-oriented user interfaces<sup>5</sup>. In consequence, no windows, icons, menus, files or dialogs are used. The integration of real world objects and digital objects within one information landscape and the possibility to interact with them in the same natural way is an important aspect of MedioVis 2.0.

By employing this concept, users are able to utilize natural and intuitive operations as search strategy in media collections.

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<sup>4</sup>Jetter, H.-C., König, W. A., Gerken, J., Reiterer, H. (2008). ZOIL - A Cross-Platform User Interface Paradigm for Personal Information Management. Personal Information Management 2008: The disappearing desktop.

<sup>5</sup>Collins, D. (1994). Designing Object-Oriented User Interfaces. Benjamin-Cummings Publishing Co., Inc.