Abstract
The paper reviews information and communication technologies as new tools in cultural representation and knowledge management, addresses issues of persuasion and engagement with the new media, explores ways on how to construct three-dimensional interfaces that are easy to use and navigate. These main issues are addressed in discussing the design of cultural interface ‘Virtual exhibition of Lithuanian Cultural Heritage’ (a Millennium project). Also, the paper reviews new and multi-media as tools in communication and knowledge management and focuses on new media’s potentials and challenges, such as virtual realities and cybertechnology.

Foreword and introduction
The advances of new technologies, the birth of interactive media and the growth of on-line publishing have resulted in greatly expanding the opportunities for writers, publishers and readers to serve their needs in ways undreamed of few years ago. Recent developments of interactive technology manifest this medium as very instrumental in exhibiting Cultural Heritage. The representation of culture on the Internet grows daily - around the world contents of libraries, archives, and museums are being digitized.

As more and more possibilities to exhibit culture emerge (in multi-media and on the Internet) it becomes obvious that both writers (as creators of nonlinear digital documents) and readers need to acquire a new type of media literacy. This could be explained as one’s ability to understand what cultural values new media representations add and what values it takes away. With this major aim in mind one example of cultural representation in the new media will be discussed. ‘Virtual exhibition of Lithuanian Cultural Heritage’ (a Millennium project) suggests a theoretical approach on how digital information should be structured, thus allowing an all-inclusive and a nonlinear (and, therefore, a democratic) approach to cultural artefacts and written explanations. Although in the current version of ‘M. K. Ciurlionis’ project (which is discussed in this paper and is treated as a part of the Millennium project) the domain information is accessed through a list of concepts, it is not difficult to envision that in three-dimensional realization the domain information could be accessed through a virtual browser, thus allowing a reader to get an illusion of himself (or herself) working in Cyberspace. It is claimed that the three-dimensional structure of the digital information empowers readers to move into the mode of motivated and reflective cognition which is required for thoughtful cultural study.

About (global) challenges
In examining established and emergent research findings on reading from screens and manipulating electronic documents, human factors researchers conclude that too much hype and too little evidence surrounds electronic cultural representations (Dillon, 1994). Until recently,
the common belief about new media environments was that readers will browse the hyperspace and, consequently, will acquire its content. However, practice shows that dealing with cultural representation in the new media, writers, designers, publishers and readers have to face several challenges: to adjust electronic (and interactive) documents to different kinds of reader types and preferences; to move from the two-dimensional paper world to three-dimensional spaces; to establish new ways for representing culture and so forth. In other words, it is not enough to use the new medium to document the content and to present information, which is visually attractive. All these possibilities (undreamed few decades ago) require readers and creators of digital collections to acquire a new type of multi-media literacy, which could be understood as a new way not only to exhibit, but, most importantly, to value Cultural Heritage.

Today the greatest challenge in representing Cultural Heritage is not so much in exhibiting artefacts, but in inclusions in digital exhibitions of non-objects, particularly, articles written by different writers, audio-visual materials and interactive virtual worlds (c.f. Wooley, 1992). This changes the role of traditional museums from the place where art collections are contained to places that contain knowledge and information on what these artefacts “talk about”. It can be suggested that the association between digital mediums of new communication technologies (digital texts, sounds and video excerpts) and the notion of information can serve as a useful conceptual base for exhibiting the Cultural Heritage. New media cultural representations can be seen as a conceptual tool which enables us to get away from the concepts of authority to information and, therefore, to knowledge. This perspective frees readers of nonlinear electronic documents from hierarchical forms of power. It does this because the idea behind interactive cultural representations in the new media is that the user (with his or her intelligence, experiences, background knowledge, temperament and amount of attention paid to the media) becomes the centre and, therefore, invents order within intertwined nodes of digital information.

About engagement, persuasion and entertainment of the new media

All art forms - and, therefore, interfaces representing culture - possess the capability to persuade. It is truism that art provides more than aesthetic function: "Art can be controversial. It can challenge the existing social order. It can make people angry. At the same time it can heighten people’s awareness. It can change the way they see things. And in so doing, it can persuade” (Gass & Seiter, 1998. P. 205).

Persuasion (as attitude formation and change) has been much studied by communication researchers who are talking about the psychology of human engaging in information technology, as both provider and user of the information it contains (McLuhan & Zingrone, 1995; Hilliard, 1991). Studies conclude that the effectiveness of messages (especially of those distributed through new media) is improved if the target of the message - the audience - is involved actively, cognitively and emotionally (Balcytiene, 1996). With interactive media emotional reaction is achieved most easily - new media presentations are more attention getting and attention holding because they stimulate more than one sense at a time. It is suggested that new media can be motivating and engaging, because this technology can provide readers with quick and easy access to a wide range of new material (c.f. Wooley, 1992; Collins, Hammond & Wellington, 1997).

Although results of those studies are not uniform enough to produce a single, definitive conclusion concerning the relationship between mediated information and attitudes, new media, allowing an all-inclusive (and, therefore, a democratic) approach is said to have a great cultural impact. Thus, evaluating cultural interfaces, the following questions need careful consideration:
• If the new (digital) medium allows an all-inclusive approach what artefacts, in what contexts and from how many perspectives have to be represented?

• How the new media transforms our understanding of Cultural Heritage and how we represent it?

• Which content and whose culture (elite or ordinary people’s) will tend to dominate in new cultural interfaces?

Furthermore, emotional reactions (which are achieved most easily with multi-media) draw our attention to the entertaining aspect of the new media. It is not difficult to see that many facets of our life become increasingly entertainment-oriented (c.f. Wooley, 1992, Taylor, 1993). For example, the main role of traditional museums is enjoyment; therefore, visitors are entertained by good stories and by “pushing buttons” on interactive multi-media displays. Although it is a truism, that this kind of access takes little time and allows readers to interact with information, negative effects come from experiential mode of cognition. Experiential cognition needs constant excitement by *extrinsic stimuli* (by piece of music or attractive visual effects) with mind working without much effort and requiring superficial interaction. On the one hand, there is nothing wrong with this mode of cognition if the reader is exploring unknown information without any specific goals in mind. Cultural research, on the other hand, requires deep mental interaction with ideas and concepts. Therefore, it can be assumed that serious study requires reflectiveness with one’s own experience (intelligence, attitudes) and should be manifested in decision making and strategic planning. All these abilities involve *intrinsic motivation* and *responsibility* and are seldom achieved with interactive media designs. Thus the following questions must be addressed:

• What are the chances to move away from the entertainment mode of cultural representation in the new media to the mode of serious study?

• How to structure digital information: Should we try to reinvent traditional mediums (like books, encyclopaedias, video collections, etc.) and traditional spaces (like museums) or try to find new electronic publishing models which are achievable by new means and allows us to use new communication opportunities to the most?

With these questions in mind let me take a look at an example of a cultural interface which deals with Lithuanian Cultural Heritage.

**Local practices:**

‘Virtual exhibition of Lithuanian Cultural Heritage’ (a Millennium project)

This project is currently under development but will be globally available from the year 2000. Lithuanian Cultural Heritage will be represented in the new media through the following perspectives: the Balts, State, Society, Culture, Landscape, Religion, the Arts, Science, Lithuania in the World, etc. All these major perspectives include nine minor perspectives in average. For example, the perspective of Science includes information on famous scholars, academies, the first Lithuanian book and its cultural context, and so forth; the perspective of the Arts suggests texts and images of artefacts, painters (for example, about Lithuanian artist Mikalojus Konstantinas Ciurlionis), musicians, modern art collections and so forth.

Although the ambitious project has a name of ‘Virtual exhibition’ it gives very little impression of someone working in Cyberspace. Texts and visual material are exhibited in two-dimensional interfaces and suggest an illusion of digital encyclopaedia rather than of virtual exhibition. For example, in case of M. K. Ciurlionis (information on whom is currently available on http://www.vdu.lt/Ciurlionis/index_lt.html), the cultural interface provides hierarchical list of concepts. From this “content node” further information on M. K. Ciurlionis’ life (“Gyvenimo
kelias’ – in Lithuanian), paintings (‘Dailes galerija’), music (‘Muzika – pirmoji kalba’), letters (‘Laiskai ir literaturine kuryba’), etc. could be obtained. It is not difficult to see that all information is highly structured (which is common for two-dimensional interfaces).

Today new information technologies allow us to create a radically new information structures which can exist beyond the subject that one is interested in. This type of information visualization - conceptual navigation - suggests the idea of three-dimensional interface. Three-dimensional navigation spaces could free readers from hierarchical (and, therefore, authoritarian) forms of presentation. For example, in case of Lithuanian artist Mikalojus Konstantinas Ciurlionis, three-dimensional interface could be realized by including interconnected concepts which provide texts and audio-visual materials describing his name, his date of birth and death, where he studied and worked, list of letters, music, paintings, drawings and so forth. In addition to this key information there could be references to all secondary sources about M. K. Ciurlionis in books, refereed journals, from what places (from all over the world) CD’s with his music could be obtained and so forth. The concept in question (‘M. K. Ciurlionis’) could be positioned in the centre of the computer screen while related terms (‘Music’, ‘Art collections’, ‘Letters’, etc.) placed nearby. If one of the surrounding terms becomes more significant (i.e. it attracts user’s attention) it takes place of the central concept (for example, ‘Art collections’ could become a central concept surrounded by more detailed information on ‘Paintings’, ‘Graphics’, ‘Museums and archives’, etc.). It is not difficult to see why this three-dimensional cultural interface might be useful. Like physical environment it shows the user what overall information space is like, how it is linked together and offers means of moving from one information node to another.

This example shows that the new media mechanism is associative. Associative data model does not constrain the relationships as much as rule based engines: once rich domain knowledge exists, it can be combined in new ways. For example, new media allows one to explore paintings of M. K. Ciurlionis in radically new ways. By activating symbols from the painting (which is currently located on the computer screen), the user can obtain an ever-changing collection of artefacts. This shows that information could be intertwined not only within one theme, but meaningful connections could be found with other themes of the project (for example, between M. K. Ciurlionis’ paintings and the Baltic symbols).

Although it sounds obvious, practice shows that this requires an enormous reorganization of human knowledge. More specifically, new electronic publishing models have to be found. Writers and readers should understand that the new (digital) medium is not an optimal interface for detailed cultural research: physiological experiments have shown that one sees a third less when light comes to the eye directly from the computer screen rather than from printed page. ‘Human factors specialists remind us that one characteristic of the new media is that the digital medium does not provide readers with essential knowledge of the length of information, how many illustrations are included in digital texts and so forth (Dillon, 1994). Physical books provide the reader with information as to thickness, size, age and so on. As a result of working with print medium readers have several basic models on how to read and comprehend messages conveyed by basic types of printed documents, for example, by conventional newspapers, books etc. The electronic equivalents also need to convey these characteristics and three-dimensional conceptual spaces could be one solution to provide readers with at least some information on what knowledge (and how much of it) is exhibited in the new media.

Synthesis: some concluding remarks
Although computers remove the barriers of storage capacity, new challenges require attention from both writers and users of cultural representations. The challenge of scholars may lie less
in conveying facts, than in teaching users to look at facts and concepts in new ways both experienced in conventional media (for example, as a chronological list, a chart or a map) and not previously experienced (for example, as a visit to a virtual space). While such transition from physical to virtual space constitutes the most obvious application of the new communication technologies, for the cultural interface the most exciting remains the challenge to see the combinations of real and virtual (therefore, addressing issues of subjectivity, democracy and ethics). In other words, not only new publishing models have to be found, but also issues concerning human interaction with technology, multi-media persuasion, etc. need careful consideration and have to be addressed before creating digital versions of cultural documents.

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References


